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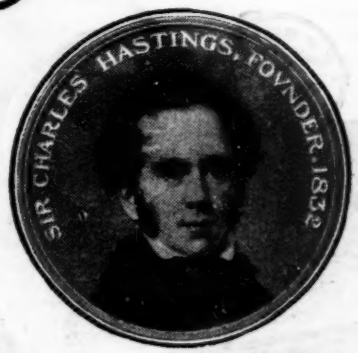

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ON

THE EXPERIMENTAL BASIS OF ENDOCRINE THERAPY.*

BY

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THE laboratory worker and the clinician naturally regard therapeutic measures from a slightly different angle, since the former is concerned chiefly to know what facts can be considered as fully proved, and the latter wishes to know what measures offer a fair chance of benefiting patients. The history of therapeutics teaches us, however, with no uncertain voice, that once speculation and imagination get free from the restraint of rigidly controlled observation there is no limit to the distance which they may wander from the paths of truth. Complex systems of treatment based on inaccurate deductions have repeatedly been built up, and have been almost universally accepted and followed until some advance of knowledge, or even some change in fashion, has sufficed to upset the whole system, and the treatment has been universally discarded and often has come to be regarded as not only useless but actually harmful.

When considering any system of treatment it is very necessary to distinguish clearly between that part of it which is definitely proved and that part which is based merely on plausible deductions, and in no case is this attitude more essential than when considering the recent developments of endocrine therapy.

The discovery of the function of the organs of internal secretion opened up a whole new field of physiology, and this knowledge led to brilliant and dramatic successes in the treatment of thyroid deficiency. This initial success suggested boundless possibilities in the use of organ extracts, and endocrine therapy has gone forward on the assumption that extracts of every other organ of internal secretion ought to yield results comparable to those obtained from thyroid therapy. There has been every temptation for therapeutic practice to outrun scientific fact, and in addition commercial enterprise has certainly done its full share in assisting in the development of endocrine therapy. The result is that endocrine therapy is coming to bear a suspicious resemblance to mediaeval magic; the savage believes that eating the heart of his enemy will confer on him the virtues of this enemy, and the more enthusiastic vendors of endocrine remedies suggest that the consumption of extracts of practically any organ will cure diseases of that organ. The general line of thought and the extent of scientific foundation are about the same in both cases.

These considerations indicate how essential it is in the case of endocrine therapy to examine the evidence closely and distinguish clearly between the remedies whose use is based upon definite evidence, and those whose use is simply based on inference. The subject of endocrine therapy can be divided into two fairly distinct divisions: (1) substitution therapy—that is, the administration of the extract of an organ in order to compensate for the deficient secretion of the organ; and (2) the use of extracts of tissues as pharmacological agents, when there is no question of substitution for a deficient secretion.

The use of adrenaline as a vaso-constrictor and the use of pituitary extract as an oxytocic are examples of the second class of action. In these two particular cases extracts of endocrine organs are used, but active pharmacological agents can also be obtained from other kinds of tissues. For example, Abel and Macht[1] found that the poison gland of the toad, *Bufo agua*, contained 6 per cent. of adrenaline and also bufotoxin, the latter being a digitalis-like substance which produced the same therapeutic action as digitalis. This example is interesting because it shows how erroneous it is to assume that, because a tissue contains a specific substance with interesting and powerful pharmacological actions, therefore this agent must be an internal secretion.

Substitution Therapy.

Substitution therapy is the most important division of endocrine therapy, and it is advisable to consider the postulates that should be fulfilled before we can assume that an organ extract acts in this way. Gley[2] has laid down three conditions which should be fulfilled before it is assumed that an organ produces an internal secretion.

1. The histological condition. The organ must contain secretory cells in intimate relation with the blood vessels and without any duct for external secretion.

2. The chemical condition. A specific chemical substance must be identified both in the organ and also in either the venous blood or lymph coming from the organ.

3. The physiological condition. The venous blood or lymph coming from the organ must produce the pharmacological actions produced by the specific substance.

Gley[3] has recognized that these conditions are so severe that they would rule out most of the endocrine organs, and has suggested that in default of the above conditions two other concurrent tests may be accepted—namely, (1) the destruction of the gland produces deficiency symptoms which present a clearly defined syndrome; and (2) this syndrome is relieved by grafting of the gland or by administration of organ extracts.

These tests of Gley's are framed to test the physiological actions of organs, but from the point of view of pharmacology slightly different tests are required. For example, even if grafting of a gland produces benefit in a deficiency syndrome, it does not follow that the administration of organ extracts will be successful.

Endocrine therapy may be considered to rest on a solid scientific foundation when the following conditions are fulfilled: (1) The destruction of a gland produces a characteristic syndrome. (2) The administration of extracts of the organ relieves this syndrome. (3) Some chemical or pharmacological test exists by which the activity of the extract can be recognized and if possible be measured. It is important to realize that even if the first condition is fulfilled it does not follow that the second condition will also be fulfilled.

An endocrine organ may fail to produce an active extract for several reasons. (1) The action of the gland may be in part or entirely a detoxicating action, in which case the administration of gland extracts will have no effect. (2) The gland may secrete its internal secretion as rapidly as it is formed. In such a case the gland will contain no store of internal secretion and its extracts will be inert. (3) The active principle may be so labile that it cannot be isolated.

In any of the above three cases grafting of the gland may be expected to relieve deficiency symptoms, but administration of gland extracts will produce no effect. All the known hormones are relatively unstable bodies, although some are much more unstable than others, and it is interesting to consider that Minchowski, as early as 1889, showed that removal of the pancreas produced diabetes, but it was more than thirty years before anyone succeeded in isolating the active principle of the pancreas in a stable form. Another difficulty is that it is necessary to discover the correct method of administering organ extracts, for in many, if not most, cases these are destroyed in the gut before absorption.

These considerations show how wide is the step between proving the effects produced by deprivation of an internal secretion and the discovery of the correct method of isolating and administering an extract to cure this deficiency. Unless some test exists by which the activity of an organ extract can be recognized these difficulties are almost insuperable.

So-called endocrine remedies have been prepared from every tissue of the body, but it is only necessary to consider those organs which fulfil the first condition—namely, that

*Delivered before the Cambridge and Huntingdon Branch of the British Medical Association.

their deprivation produces a definite syndrome suggestive of deficiency disease. Such glands are nine in number.

Gland.	*Chief Effects produced by Destruction or Deficiency of Gland.*
1. The thyroid	Cretinism or myxoedema.
2. The parathyroids ...	Tetany, and derangement of calcium metabolism.
3. The islet tissue of the pancreas	Inability of tissues to utilize carbohydrates; hyperglycaemia and glycosuria.
4. The testicles	Eunuchism.
5. The ovaries	Premature menopause.
6. The suprarenal cortex ...	Asthenia, low blood pressure, and death in a few days.
7. The suprarenal medulla	The effects produced are doubtful.
8. The anterior lobe of the pituitary	Infantilism and obesity.
9. Posterior lobe of the pituitary	Increased carbohydrate tolerance. Diabetes insipidus (?).

Unfortunately only a few of these glands fulfil the second condition in at all a satisfactory manner. The evidence regarding the different glands is shortly as follows.

The Thyroid.

The evidence for substitution therapy in the case of the thyroid is practically complete. Administration of dried thyroid relieves the symptoms of thyroid deficiency, the active principle thyroxin has a known chemical formula and structure, and the activity of thyroid preparations can be estimated by physiological tests. Finally, it is known that thyroid extract produces its specific action when given by the mouth. In addition, hypertrophy of the thyroid produces a definite syndrome, and many of the signs of this syndrome can be produced by administering excess of thyroid gland.

The Parathyroids.

Unfortunately there is doubt whether the tetany produced by extirpation of the parathyroids can be relieved by administration of parathyroid. Biedl, for example, obtained consistently negative results in such experiments performed on cats.

The parathyroids are believed to have a double action—a detoxicating action consisting in the destruction of guanidine compounds, and a second action on calcium metabolism.

Vines[4] has reported valuable results from the administration of dried parathyroid in chronic sepsis. The preparation caused a rise in the calcium in the blood and a rapid clinical improvement. This action, however, is not of necessity an example of substitution therapy.

The Islet Tissue of the Pancreas.

As has already been mentioned, the connexion between the pancreas and carbohydrate metabolism has been known for more than thirty years, but the difficulty of extracting the active principle from the pancreas has only recently been overcome by the work of Banting and Macleod. Apparently the internal secretion of the pancreas can be temporarily replaced by the injection of insulin, and the use of insulin is a true case of substitution therapy.

It is instructive, however, to compare the difficulties attending the isolation and administration of insulin with the administration of thyroid. Dried thyroid given by the mouth is an effective means of substitution therapy in the one case, but in the case of insulin the discovery of a method for the extraction of the active principle was a matter of great difficulty, and even now when a suitable method has been discovered it is necessary to test every batch manufactured, since any small error in extraction will result in an inactive product; moreover, insulin has to be given hypodermically, for it is inactive when given by the mouth or when sprayed into the nose.

The Gonads.

The effects of castration or spaying have been known for centuries, and there is satisfactory evidence that many of these effects can be relieved by grafting of glands. The evidence as to the effect of testicular and ovarian extracts is, however, extremely unsatisfactory. Every imaginable claim has been made as to the action of these extracts, but all the more careful observers are very reserved in their opinions. Professor Murray[5] recently stated:

"There is very little satisfactory evidence that either testicular or ovarian preparations have any therapeutic action when injected or taken by the mouth. The development of eunuchism after removal of the testicles and the corresponding condition after removal of the ovaries are generally considered to be due to loss of internal secretion of the gonads. There is, however, no evidence that either eunuchism can be removed by the use of testicular extract or the signs of a premature post-operative menopause averted by taking ovarian tablets. The relief of subjective sensations has been reported, but this is not sufficient evidence."

The use of testicular extract was, of course, the first example of attempted substitution therapy, for it was introduced by Brown-Séquard in 1889. There is, however, to-day no satisfactory evidence that we have yet succeeded in obtaining a preparation from either the testicles or the ovaries which will produce a true substitution effect.

The Suprarenal Cortex and Medulla.

These conjoined glands present a remarkable and even paradoxical contrast as regards endocrine therapy.

We know that the suprarenal cortex is absolutely essential to life and that its destruction rapidly causes death. Nevertheless, we do not know for certain whether the cortex acts as an organ of internal secretion, or whether it has only a detoxicating action, and no one has obtained from it an active extract.

On the other hand, the suprarenal medulla contains the intensely active substance adrenaline. The chemistry and pharmacology of adrenaline have been fully worked out, and it is possible to make fairly accurate quantitative estimations of the adrenaline content of the medulla. We know, however, very little indeed as to the physiological action of adrenaline. Recent work makes it doubtful if the destruction of the suprarenal medulla produces any very definite effects, and Cannon,[6] in a recent paper, concluded:

"There is no satisfactory evidence that, in natural quiet existence, the suprarenal medulla gives off any secretion whatever. In times of stress it is brought into action by nerve impulses, and may then support the influence of the sympathetic system and have besides special functions of its own."

The evidence for successful substitution therapy in the case of either the suprarenal cortex or medulla is therefore very scanty. In Addison's disease there is destruction of both the cortex and medulla, but extracts of the suprarenals do not cure this condition, although adrenaline may produce some temporary benefit.

The Anterior and Posterior Lobes of the Pituitary.

Deficiency of the anterior lobe of the pituitary is believed to produce Fröhlich's syndrome—namely, infantilism associated with obesity and torpidity. Cushing[7] found that large doses of the dried lobe by the mouth produced benefit in this condition; in one case 1.2 gram daily was required and in another extreme case 20 grams daily were needed. Nothing is known, however, about the chemical properties of the active principle of the anterior lobe.

The posterior lobe contains several active principles of unknown chemical nature, but with very powerful pharmacological actions. The extract is of value in obstetrics as an oxytocic, as a vaso-constrictor in shock, and as a gut stimulant in prevention of tympanites; finally, it produces a temporary curative effect in diabetes insipidus. This last example appears at first sight to be a clear case of substitution therapy, since diabetes insipidus is frequently associated with injury in the pituitary region and with pituitary tumours. Recent work has, however, shown that diabetes insipidus and other symptoms attributed to the destruction of the pituitary by operation, injury, or tumour are probably due to interference with the adjacent portions of the brain.

Pituitary deficiency also produces increased carbohydrate tolerance, and Cushing found that this was abolished by administration of posterior lobe extract. The extract produced its action on hypodermic or oral administration, the relative activities being as one is to four. This is remarkable, for, as regards its other actions, the posterior lobe extract has little or no action if given by the mouth, although it will act if sprayed into the nose.

The above summary shows that only in a few cases is there a satisfactory experimental basis for the practice of substitution therapy. The evidence in the case of dried thyroid and of insulin is practically complete, and the deficiency

diseases for which these extracts are used are comparatively common. Pituitary extracts appear to have a definite effect as substitution remedies, but the condition of pituitary deficiency is rare. The only example of the use of suprarenal extracts as agents in substitution therapy is the temporary beneficial action produced by adrenaline in Addison's disease. Dried parathyroid has an important action in raising the content of calcium in the blood in chronic sepsis, but it is not certain if this is an example of substitution therapy. It cannot be said that there is any definite experimental basis for the therapeutic use of extracts of the gonads.

In addition to the above actions there are various therapeutic uses for endocrine extracts which have nothing to do with substitution therapy. Examples of such actions are the use of adrenaline as a styptic, or as a cardiac stimulant in sudden arrest of the heart, the use of pituitary extract in obstetrics, and the use of dried thyroid to increase metabolism and to decrease obesity.

Nothing has been said of the use of extracts of the spleen, the thymus, and the pineal gland, since in none of these cases does removal of the gland produce any definite syndrome, and hence there is no experimental basis for the use of extracts of these glands as substitution agents.

Extracts of every tissue of the body have been put on the market, and it is possible to obtain from practically any tissue in the body extracts which, when injected, produce pharmacological actions; this does not prove, however, that the glands from which the extracts were prepared have any internal secretion. Splenic extracts, for example, produce increased movements of the gut, and so, indeed, do extracts of many other tissues of the body; this fact does not, of course, prove that the spleen has any influence on the activity of the gut in life, nor is there any reason to suppose that splenic extracts are superior for the treatment of constipation to the numerous other drugs of known composition which can produce a similar action.

A general survey of the results of substitution therapy is undoubtedly disappointing, for the first discovery, the action of dried thyroid, is still of more importance than all subsequent discoveries put together. A comparison of the different endocrine organs suggests that a possible reason for this is that the thyroid gland shows certain unique features which are likely to favour the use of its preparations in substitution therapy. Histological examination shows that the thyroid is constructed to allow of storage of its secretion, whereas the anterior lobe of the pituitary is the only other endocrine gland which possesses a vesicular structure. A possible reason for this peculiarity is that the body is dependent for normal metabolism on a regular supply of thyroid secretion, but the thyroid can only produce thyroxin if supplied with iodine, and iodine is a relatively rare element.

Marine[8] has shown that a biennial supply of iodide is sufficient to prevent the development of goitre in children living in a goitre district. This suggests that the thyroid stores several months' supply of its active principle. This storage is of advantage in two ways in endocrine therapy—in the first place, very large amounts of active principle can be obtained from the gland, and in the second place a secretion that is stored is more likely to be stable than one which is passed out into the body directly it is produced.

A comparison between dried thyroid and insulin indicates a very great difference in the yield of active principle in the two cases. The human thyroid weighs about 25 grams, and a daily dose of about 0.3 gram of fresh thyroid is sufficient to keep many cretins in normal health (Murray[5]). This is with oral administration, and about a quarter of this dose would probably be sufficient if given hypodermically. These facts indicate that the thyroid stores more than one hundred days' supply of secretion. The human pancreas weighs about 125 grams, and this weight of pancreas will only yield a supply of insulin sufficient for two or three days' treatment of a severe case of diabetes.

The comparison cannot be pressed too far, but it has been tacitly assumed that the results obtained with thyroid medication ought to be repeated with the same ease with every other endocrine gland, whereas the difficulties attending the preparation of insulin, and the comparatively meagre yield obtained, are probably more nearly typical of endocrine secretions as a whole.

Substitution Therapy in Hyposecretion.

At least three-quarters of any endocrine organ must be destroyed in an animal in order to produce any certain evidence of deficiency disease; consequently it is extremely difficult to obtain experimental evidence of the effects of a partial deficiency of any internal secretion.

Various causes are known which produce destruction of certain of the endocrine organs—for example, tuberculosis of the suprarenals, tumours of the pituitary, lack of iodine in the case of the thyroid, acute infections in the case of the pancreas and parathyroids. There is, however, no evidence for the assumption that partial deficiency in the internal secretions is at all a common cause of disease. Since these glands help to regulate every activity of the body, it is perfectly easy to draw up schemes whereby the symptoms of practically all obscure diseases can be attributed to some disorder of internal secretion, but it is important to remember that such schemes, although interesting speculations, lack any definite proof.

Polyglandular Therapy.

The short review I have given indicates that the therapeutic action of only a few of the endocrine extracts is established with any degree of certainty, and it is interesting to consider what basis of proof exists for the polyglandular therapy that is becoming so popular. Typical polyglandular formulae usually contain some or all of the following preparations: dried thyroid, extract of the posterior lobe of the pituitary, thymus, adrenaline, and extract of testicles or ovaries. The remedy is usually given by the mouth.

Of these constituents the thyroid is beneficent if the patient chances to be suffering from thyroid deficiency, and in other cases there is usually too little present to do any harm. Pituitary extract is inactive when given by the mouth, except as regards its effect in reducing carbohydrate tolerance in cases of pituitary tumour deficiency; this action would be assisted by the thyroid, but it is difficult to see what benefit it would produce for the patient. Pituitary deficiency, as manifested by Fröhlich's syndrome or by diabetes insipidus, is very rare, and outside of these conditions there is no rational indication for the use of pituitary extract other than its usual use as a temporary stimulant to the uterus, gut, or blood vessels. It is not known whether the thymus even has an internal secretion, nor is it known whether its extracts have any therapeutic action. As regards adrenaline, it is not certain whether its secretion is essential for the normal health of the body. In particular we know that the low blood pressure and asthenia in Addison's disease are not simple results of adrenaline deprivation. Adrenaline, when given by the mouth, may be of benefit in gastric haemorrhage or to relax oesophageal spasm, but otherwise there are few actions that it has been shown to exert when given by the mouth. Finally, nothing is known for certain about the action of extracts of the gonads.

I suggest that the administration of a mixture of the above nature is as far removed from rational therapy as is the writing out of a charm on a piece of paper and giving that to the patient to swallow. I have assumed that the extracts on the market have as high a degree of potency as any that it is possible to produce. This is, of course, an unwarranted assumption, for in the case of those extracts where a test of activity has been found, and a correct method of extraction discovered, it frequently happens that some slight error in extraction may result in an inactive preparation being produced; this can occur, for example, with insulin and with extract of the posterior lobe of the pituitary. Obviously in those cases where there is no reliable test for the activity of extracts, it is impossible even to know which is the best method of preparation, and the odds against such preparations having any activity whatever are very heavy.

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TREATMENT OF GONOCOCCAL INFECTION BY DIATHERMY.*

BY

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THE clinical investigation of the treatment of gonococcal infection by diathermy was commenced in the electrical department of St. Bartholomew's Hospital in 1913. An indication of the value of diathermy for this purpose was furnished by the results obtained in two cases of gonococcal arthritis. These cases had resisted long courses of treatment in the wards by other methods and were then sent to the electrical department. Diathermy was applied to the joints, and the results were so good that other cases of the disease were subjected to the same treatment. Equally encouraging results were obtained. It was therefore decided to investigate the effect of diathermy on gonococcal infection of other parts. Cases of epididymitis and orchitis were treated, and, afterwards, cases of endocervicitis and urethritis in the female and prostatitis in the male. Up to the present we have treated 67 cases. The purpose of this paper is to describe the results which we have obtained and to indicate our methods of procedure. The latter have been varied from time to time, and it is likely that further improvement will be suggested with gain of experience.

The reasons for the selection of diathermy for the treatment of infection by the gonococcus are the following. The organism mentioned can be destroyed at a temperature which is not high enough to damage the living tissues. In diathermy we possess a means of raising the temperature of the tissues *en masse*, whereas other methods of applying heat raise the temperature of the superficial parts only. The clinical results and bacteriological tests have abundantly justified the use of diathermy for the purpose mentioned, and the reasons just given furnish a rational explanation of the mode of action of the new method of treatment. In almost all our cases of gonococcal arthritis we were able, within a comparatively short period of time, to abolish the pain, reduce the swelling, and increase the range of movement; crippled joints were rendered useful, and patients who had been compelled to stay in bed before the treatment were able to walk about with a considerable degree of comfort after a course of diathermy. Cases of gonococcal orchitis and epididymitis without exception quickly lost their pain and swelling after diathermy, even if the symptoms were severe.

Convincing proof of the therapeutic power of diathermy in gonococcal infection was furnished by the disappearance of pain and swelling from joints or scrotum after the application of the treatment *to the site of the original infection*. Cases of gonococcal arthritis were freed from pain after application of diathermy to the urethra and prostate, or urethra and cervix, without the inclusion of the joints in the treatment. We have also had cases in which the application of diathermy to the joints did not procure much relief until the parts originally infected were included in the treatment.

We have applied diathermy to the urethra and cervix uteri in the female in cases in which these parts alone were infected. Such applications were followed by disappearance of the gonococci and cessation or diminution of the discharge. The failure to find gonococci in a discharge does not prove that these organisms are not present in the parts from which the discharge originates. But if repeated attempts to find them are unsuccessful and a mucous discharge alone remains—not excessive in amount, and without bacteria—it may reasonably be concluded that the treatment has been effective. Further proof of the efficiency of diathermy in the treatment of infection of the cervix and urethra is afforded by the fact above mentioned—namely, the subsidence of arthritis after application of diathermy, not to the joints but to the parts originally infected.

The treatment of gonococcal infection of certain regions, whether by irrigation, external applications, or vaccines, is unsatisfactory. This is the case especially with the joints, the cervix uteri and urethra in the female and the prostate in the male. Almost all the cases which we have treated had been previously subjected to other forms of treatment, and we were able by means of diathermy to procure succcess where other methods had failed.

Sensitivity of the Gonococcus to Heat.

Gonococci are destroyed if the temperature of the medium on which they grow is raised a few degrees above normal. Cultures of these organisms do not survive if they are left overnight in an incubator and the temperature of the latter has risen to 102°. Some experiments were made by Santos to ascertain the temperature and the length of exposure sufficient to kill cultures of gonococci. He found that exposures to 43° C. for seventy-six minutes, to 44° C. for fifty-four minutes, and to 45° C. for thirty-seven minutes were required. Laqueur injected emulsions containing living gonococci into the joints of dogs, and found that the joints which were exposed to diathermy contained a sterile fluid while those which were not exposed contained living organisms.

Cases have been noted of the influence of pyrexia due to other causes on coexisting gonorrhoea. One case was that of a man who had suffered for a long time from gonorrhoea which had resisted treatment. When residing in West Africa he acquired blackwater fever; on his recovery from the later the gonorrhoea had disappeared and did not return.

In addition to its direct action on the gonococci diathermy produces certain effects in the tissues which are prejudicial to the existence of the organisms. The increase of the supply of blood to the heated tissues probably has some therapeutic effect. The application of diathermy to mucous membranes causes an increased exudation of lymph and secretion of mucus. The drainage of the infected parts is thereby aided and it is possible that the heated lymph and mucus exert a germicidal action.

Treatment of Gonococcal Arthritis by Diathermy.

Our earliest experience of the action of diathermy on infection by the gonococcus was obtained in cases of arthritis. We shall therefore describe our experience in the treatment of this disease first.

The space at our disposal will not allow a detailed description of our methods of applying diathermy to different joints. It is necessary that the current should be directed *transversely* through the joints rather than longitudinally. The applications should last not less than twenty minutes each, and they should be repeated not less frequently than twice weekly. Longer and more frequent applications would probably procure quicker results.

In our first seven cases diathermy was applied to the joints only and the average number of applications was nine. Relief of pain was procured, however, by a considerably smaller number than nine, and the patients usually obtained some relief after the first treatment. Some of the subsequent cases did not obtain relief until the diathermy was applied, in addition, to the original site of the infection. It is now our custom, in all cases of arthritis, to apply diathermy to the urethra and prostate or urethra and cervix uteri as well as to the joints. Quicker and better results are obtained when this is done. In two cases, however, we were able to procure complete relief of pain by applying diathermy to the parts first infected without including the joints.

Up to the present time we have completed the treatment of 25 cases of gonococcal arthritis: 13 of these were in

* This paper is an abstract of a monograph which contains details of cases and particulars of experiments and methods. The monograph will be published as soon as possible.

male patients, 9 of whom had gonorrhoea when treatment by diathermy was commenced; in the remaining 4 the discharge had ceased before beginning the diathermy. In 6 of the 12 female cases there was bacteriological evidence of gonococcal infection; the remaining 6 had vaginal discharge; one of them had sought treatment at the special centre and in another the radiological appearance of the joints suggested gonococcal arthritis.

Of the 25 cases 19 were in out-patients who came from the special centre for the treatment of venereal diseases. The others were in in-patients at St. Bartholomew's or the West Middlesex Hospital. Three of the cases had been bed-ridden before admission to hospital. The ages of the patients varied from 16 to 56. In 7 cases one joint only was affected, two joints were involved in 8 cases, three joints in 4 cases, four joints in 2 cases, while in the remaining 4 cases more than four joints were affected. The knee was involved in 17 cases.

With two exceptions the cases derived the greatest benefit from diathermy; pain was abolished, swelling was reduced, and the range of movement was increased. Patients who had required the use of crutches or sticks were able to walk unaided and resume their work. Others who had been unable to follow their occupation owing to pain in their upper limbs were able to resume their work, and three bed-ridden patients were able to get up and walk about. In the cases in which the infection had persisted for long periods and caused thickening of the synovial membrane and ligaments and capsule of the joints and destruction of the articular cartilages slight swelling of the joints remained together with some limitation of movement. These cases were, however, freed from pain and tenderness and the joints could be used without discomfort, so that further treatment by other physical methods procured additional usefulness of the limbs. If the dire results which may follow long-continued gonococcal arthritis be remembered (Osler described this condition as "in many respects one of the most damaging, disabling and serious of all the complications of gonorrhoea") it may be claimed that the results of treatment by diathermy are far superior to those obtained by other methods.

In the two cases in which the results were less satisfactory we were unable to complete the treatment. One of these was that of a girl, aged 16, an in-patient, who had severe pains in many joints. The fluid from the cervix, on cultivation, grew one colony of gonococci. The application of diathermy *to the joints* procured some relief—she no longer screamed with pain when lifted from the stretcher on to the diathermy couch and was no longer sleepless at night. Diathermy was not applied to the cervix as general anaesthesia was necessary in order to pass a speculum. In the light of our later experience we are of the opinion that this patient would have derived complete relief if diathermy could have been applied to the cervix.

The other patient had to be discharged from the ward on account of unruly behaviour. During the period in which treatment was applied he derived some relief from the pain in his joints so that he had fair nights and his general condition improved. The discharge from his urethra did not entirely disappear, but he no longer passed clots of pus with pain and strangury, as had been the case before the treatment was applied.

Treatment of Gonococcal Orchitis and Epididymitis.

To apply diathermy to the testis and epididymis we have used electrodes made of sheet lead cut in a special way so that they can make even contact with the scrotum and its contents on the affected side. The other electrode was, in our first series of cases, placed on the hypogastrium. Afterwards we applied it to the prostate or penis in order to include the original site of the infection in the treatment.

Up to the present we have treated 26 cases. In no branch of treatment have we obtained results so consistently good and rapid as those following the application of diathermy to the testis and epididymis when painful, tender, and swollen as the result of infection by the gonococcus. Pain and tenderness diminish or disappear after the first application, and after the third there are no symptoms or signs of abnormality save slight thickening of the epididymis without tenderness on pressure. We have never found it necessary to give more than four applications and in the majority of cases three were sufficient.

It is usually stated that pain and tenderness will subside from the testis and epididymis when the urethra has been successfully treated by the customary methods. We have had cases, however, in which the urethral discharge had disappeared after treatment, leaving, however, pain, tenderness, and swelling of the epididymis and testis, which would not subside until diathermy was applied. We have also had cases in which diathermy produced the results above described even though a discharge containing gonococci was still present.

In cases which respond successfully to methods of treatment other than diathermy the pain and tenderness do not subside before six weeks have elapsed. With diathermy, however, the period of treatment is a week or ten days, and the number of applications rarely exceeds three. This number would probably produce the same effect if given in less than a week, but in hospital practice we cannot as a rule treat such cases more frequently than twice weekly.

Treatment of Gonococcal Urethritis (Female) and Endocervicitis.

During our investigation of the action of diathermy on gonococcal arthritis in the female we found that some of the patients did not derive much relief until the regions first infected were subjected to the same treatment. This indicates that diathermy has some therapeutic action on the urethra and cervix when infected by the gonococcus. In order to ascertain the extent of this action we applied diathermy to cases of gonorrhoea in the female in which there was no complicating arthritis and noted the effect on the gonococci and the discharge.

For the application of diathermy to the urethra and cervix we have conducted experiments and as a result have devised methods the usefulness of which we have investigated. For reasons of limitation of space we are unable to describe these or give details of technique. We have used a bougie electrode for the urethra and have found that the patients were sufficiently sensitive to heat in this part to prevent the application of a current which would damage the mucous membrane. This is not the case with the cervix. This part can be cauterized by diathermy without paining the patient. To apply a safe degree of heat a knowledge of diathermy currents and familiarity with their clinical use is necessary, but, briefly described, our procedure is to note the strength of the current previously used for the urethra and to apply an amount to the cervix proportional to the smaller extent of surface in contact with the bougie when it is in the cervix. Probably an easier method would be to use electrodes fitted with thermometers. At present we are occupied in the construction of such electrodes.

Up to the present we have treated 16 patients who, suffering from vaginal discharge, sought treatment at the special centre. Gonococci were found in 14, either in the urethra or cervix or in both parts. These patients had been subjected to treatment at the centre by the customary methods, and as the discharge and the gonococci did not disappear it was decided to try the effect of diathermy. Both the urethra and the cervix were treated and the average number of applications was four to each part. At the end of the treatment and at later intervals each case was examined bacteriologically. With one exception, no gonococci were discovered, nor were they found at later periods. The length of time for which the patients were under observation depended on the fidelity with which they obeyed their instructions to report for examination. It varied from two months to one year.

The failure to find gonococci is insufficient evidence of freedom from infection by these organisms. Four of our cases, however, stated that they were free from discharge and no discharge was visible on examination. Two of these cases did not report for further examination. The other

two were examined at later dates and both remained free from discharge, one after ten weeks and the other after four months. Three cases in which a slight discharge persisted were afterwards treated by zinc or copper ions and the discharge disappeared. These cases were seen again after two, three, and six months respectively, and no discharge was visible. In the remaining six cases the patients said that the discharge had diminished. In these the discharge was not purulent in appearance, and in one it was clear and resembled mucus. In one of the two cases in which gonococci were not found before the diathermy the discharge disappeared after the treatment; the patient was told to report again but did not do so. The other case could not complete the treatment as she had to leave London; her doctor reported that the discharge was "much less." The patient from whom the gonococci could not be made to disappear was probably reinfected as her husband also had gonorrhoea and was under treatment at the centre.

The question whether complete cure of gonococcal cervicitis or urethritis has been obtained cannot be answered by the absence of gonococci from the discharge. Complete subsidence of discharge is in its favour. Often, however, some discharge continues, and the question will arise in such cases whether the discharge is pathological. A discharge of pure mucus is not evidence of gonococcal infection. If, however, pus is present in the discharge it must be considered as pathological. A point in the treatment will often be reached in which although the discharge is mainly mucus there are still present small numbers of leucocytes. After ionization and diathermy in which sloughing has taken place leucocytes will be present as the result of the formation of granulations. Often, on the cessation of treatment, these will disappear and the discharge will finally clear up after a short time without further treatment. It is to be remembered that these treatments to the cervix *tend to maintain* this muco-purulent discharge. It becomes therefore a matter of judgement founded on experience when the treatments should be left off in the expectation that the discharge will eventually cease.

Treatment of Gonococcal Prostatitis by Diathermy.

At present we have not obtained sufficient evidence to enable us to make a definite conclusion on the action of diathermy on gonococcal prostatitis. Our results so far seem to show that the new treatment possesses therapeutic action in this disease. We treated one of our cases of arthritis by applying diathermy *to the prostate only*, and obtained the effects already mentioned—namely, abolition of pain, reduction of swelling, and increase of movement. We also noted the disappearance of pain and tenderness from the epididymis in a case of gonococcal infection of this part after application of diathermy *to the prostate only*. The following case also is suggestive. The patient gave a history of gonorrhoea. In his perineum there was a fistula leading to his urethra immediately behind a stricture of the passage mentioned. He complained of severe pain in the right lower limb. There was tenderness on pressure over the back of the thigh and flexion of the hip caused extreme pain. It was decided to apply diathermy to the prostate only. Complete and permanent relief of pain was produced, and the only symptom which remained was some discomfort on stooping with the knees extended.

It has already been mentioned that some of the cases of arthritis did not obtain relief until the urethra and prostate were also subjected to diathermy. In all these cases, save that described above, both prostate and urethra were treated simultaneously. We are therefore unable to state the region on which the diathermy exerted its therapeutic action—whether the urethra or prostate or both. Further light on this question would be thrown by the application of diathermy to cases in which only the anterior urethra was infected and to others in which the clinical evidence pointed to subsidence of infection from the anterior urethra with persistence in the prostate. This investigation is at present occupying our attention.

DIATHERMY FOR MALIGNANT DISEASE OF THE MOUTH, PHARYNX, AND NOSE.

WITH NOTES ON SEVENTEEN SUCCESSFUL CASES.

BY

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FOR the last eight years I have been employing diathermy in the treatment of carcinoma affecting the mouth and pharynx. Unfortunately, the great majority of the patients treated were suffering from advanced disease; this was true of all the early cases, and of nearly all those treated in hospital. A very considerable number of patients were suffering from secondary deposits in the glands on one or both sides of the neck, and in some cases the glandular involvement was extensive. Cutting operations of magnitude had, therefore, frequently to be carried out in the neck; diathermy is rarely, if ever, of any use in dealing with the malignant extensions in the neck. Faulty technique and the too timid use of the diathermy electrode accounted for some of the failures in the earlier series of cases. Owing to the great size or unfavourable position of the growth, or the general cachectic condition of the patient, many of the cases dealt with would now be deemed unsuitable for any sort of treatment. Haemorrhage during the separation of the sloughs was a not infrequent occurrence. Since I have adopted ligature of the main vessel or vessels supplying the part in cases requiring extensive diathermy, or in patients with thickened arteries and high blood pressure, severe haemorrhage has not been met with.

When the growth is small, superficial, and situated some distance from important and vital structures, and when the glands are free from involvement, or only slightly invaded, there is an excellent chance of a complete and lasting cure. My experience is that, if local recurrence is going to take place, it will generally happen during the first six months. This, of course, does not apply to recurrences in the neck. When the primary growth is very extensive, deeply rooted, and situated in a locality unfavourable to its free destruction, and more especially when the secondary deposits in the neck are massive or fixed, there is little likelihood of effecting a cure, and there may be great risk in subjecting the patient to operation. However, most of the cases recorded in this article were described by others as "inoperable," and some of them were very extensive; it is difficult, therefore, to draw the line between cases which should be subjected to treatment and those which should be left alone. Much depends on the general condition of the patient and the special experience of the surgeon. Every practitioner should be alive to the grave significance of an ulcer or indurated area occurring in the tongue, mouth, or pharynx of a patient over middle age. The condition rarely proves to be simple, or due to any other cause than malignant disease. It is well, therefore, to regard every doubtful case as one of cancer until it is proved to be due to some other cause. To the practised observer the diagnosis of epithelioma is generally easy. Over and over again the author has seen patients who have been diagnosed as suffering from "septic ulcer," "cyst," "gumma," when the real trouble was epithelioma. Many cases of supposed syphilis are repeatedly injected with salvarsan or soaked with iodides. It is important to remember that a great many patients with buccal or pharyngeal cancer will give a positive Wassermann reaction.

In the majority of cases the growth is visible on ordinary inspection—it is generally best to use reflected light. If it is situated at the base of the tongue, low down in the pharynx, or in the neighbourhood of the larynx, a laryngeal mirror will be required for its inspection. In nearly all cases palpation with the finger is possible, and it should never be omitted, as the cartilaginous hardness of an epithelioma is one of its most characteristic features.

Microscopic examination of a fragment of the tumour

will clinch the diagnosis. There is one objection to this method—namely, that even such a small operation is followed by more rapid advance of the growth, and this is especially the case if some of the surrounding healthy tissue is removed at the same time. Before removing a portion for microscopic examination, consent should, therefore, be obtained for an early operation, should such an operation be found to be necessary.

So far the only treatment of cancer which has stood the test of time is that which aims at the total removal or destruction of the tumour and its extensions. The writer has come to the conclusion, after considerable experience, that in cancerous growths situated in the pharynx and mouth the ultimate results are likely to be infinitely better when the primary growth is dealt with by diathermy, rather than by a cutting operation. He stated (*Lancet*, 1920) his reasons for this opinion, which he has had no cause since to modify. Many brilliant successes would be obtained if the disease could only be diagnosed and treated in its early stage.

The glands have not been removed in every case; this is owing to the fact that consent has not always been obtained. Removal of glands (and this generally means thorough clearance of both anterior and posterior triangles by "block" dissection) should be carried out even when no enlarged glands can be discovered on palpation. In one of the author's cases—not recorded in this series because he has a recurrence—a man suffering from a small epithelioma involving the uvula, and just extending on to the soft palate, was treated by diathermy. There was no enlargement of the glands, but the patient was urged to have the triangles of the neck cleared out on both sides. He absolutely refused. Four years later malignant glands have developed on both sides of the neck; the region of the palate has remained perfectly healthy. It is generally advisable to destroy the growth in the first instance, and subsequently to remove the glands. Occasionally the two operations can be carried out at the same sitting. If the surgeon is in doubt whether or not he can make a thorough clearance of the neck, then the gland operation should precede that on the primary growth. If the glands cannot be dealt with it is little use applying diathermy to the primary tumour, except as a palliative measure. It is sometimes advisable to operate on the glands in the first instance, and to deal subsequently with the primary tumour, as consent for the neck operation may be difficult to obtain after the growth itself has been destroyed. Before commencing treatment it is well to try and obtain consent for two or three operations, and to impress on the patient the importance of the removal of glands. If the diathermized area approaches or invades the fascial planes of the neck—and this is most likely to occur in cancer of the floor of the mouth—a clear interval of a fortnight or three weeks should be allowed between the destruction of the primary growth by diathermy and the neck operation. If this rule is not observed alarming sepsis may occur in the neck, which may lead to a fatal issue. Preliminary ligature of the external carotid should be adopted, as stated above, when secondary haemorrhage is to be feared.

The following cases have been successfully treated. In some of these it might almost be stated that a cure has been effected; in most of them it is to be hoped that the disease will not recur.

Case 1.

A man complained of sore throat, and on examination there was discovered an extensive epithelioma of the right tonsil and right side of the tongue and of the floor of the mouth. This was treated by diathermy, and the patient went on well for a time. Later, however, he returned to hospital with a carcinomatous tumour involving the right side of the tongue and the right side of the mouth, and there was a large, hard mass in the right submaxillary region. The tumour in the mouth was subjected to vigorous diathermy, and the mass in the neck was removed by dissection. The patient, nearly eight years later, is actively engaged as a tram conductor and at present there is no sign of growth.

Case 2.

An elderly lady was found to be suffering from endothelioma of the base of the tongue. With the aid of suspension laryngoscopy the growth was removed by diathermy (excision method). There was no recurrence six years after operation.

Case 3.

A man, aged 52, complained of soreness of the floor of the mouth and a lump at the right side of the jaw, of two months' duration. On examination a carcinoma of the middle of the floor of the mouth was found; the tongue was freely movable, and there was an enlarged hard gland in the right submaxillary region; the glands on the left side were not enlarged. The growth was freely destroyed by diathermy, and a fortnight later the glands were removed in the usual way. There was no recurrence more than six years after.

Case 4.

A woman, aged 58, presented a cauliflower-like growth (epithelioma) on the right side of the hard palate, and on transillumination the right antrum was dark. The upper jaw was resected, and three weeks later the cavity was thoroughly subjected to diathermy. The patient went on well for a year and ten months, when she reappeared with a small nodule in the scar, which was destroyed by diathermy. Six months later she came to hospital with a large mass in the upper part of the neck, which was removed, together with the fascia and glands in both anterior and posterior triangles, the internal jugular vein, and the upper portion of the sterno-mastoid muscle. She is well six years and three months after the original operation.

Case 5.

A man, aged 55, complained of soreness of the throat, of seven weeks' duration; there were enlarged glands on the left side of the neck. An epithelioma of the posterior part of the tongue on the left side was found, invading the anterior pillar of the fauces and the tonsil. The growth was removed by diathermy, and subsequently the glands on the left side of the neck were removed. There was no recurrence five years and three months after operation.

Case 6.

A man, aged 57, complained of pain on swallowing for several months; he was an excessive smoker, but a total abstainer. Examination showed a large epithelioma of the right tonsil and palate, which was removed by diathermy. A year later the glands on the right side of the neck were thoroughly removed. There was no recurrence four years and five months after operation.

Case 7.

A man, aged 46, had suffered from repeated sore throat during the previous three years, and six weeks before he was examined he began to have pain on swallowing; he had lost weight during the past year. On examination an extensive carcinoma of the base of the tongue, right tonsil, and soft palate was found. Diathermy was applied to the growth, and a fortnight later an extensive removal of the glands on the right side of the neck was performed, and the external jugular vein resected. A fortnight later, again, the glands were cleared on the left side of the neck, and at the same time diathermy was applied to a small area of growth which had been missed at the first operation. A month later a suspicious area was seen and diathermy was applied to it. There was no recurrence three years after the last operation.

Case 8.

A man, aged 67, had a small superficially placed epithelioma of the left tonsil and anterior pillar; there were no enlarged glands. The growth was thoroughly destroyed by diathermy. Three months later a hard gland was discovered over the bifurcation of the left carotid. The anterior triangle was dissected, and three months later, a small gland being felt in the left posterior triangle, this region was cleared. There was no recurrence over three years after the first operation.

Case 9.

A middle-aged lady had an epithelioma of the posterior pharyngeal wall, just above the arytenoids. Suspension laryngoscopy was employed to bring the growth into view, and it was destroyed by diathermy, together with a good margin of the surrounding tissue. After three years there was no recurrence.

Case 10.

A man, aged 64, had noticed a small lump on the left side of his tongue for four months. Examination showed an epithelioma of the tongue and floor of the mouth; no glands were palpable. Diathermy was employed, and the tongue was divided down the centre and cut across well behind the growth. There was no recurrence two years and three months after operation.

Case 11.

The patient, a man, had noticed a hard lump on the right side of the tongue for two or three months. On examination an epithelioma of the tongue and floor of the mouth was found; no glands were palpable. The growth was removed by diathermy, and a fortnight later the anterior triangle of the right side was cleared. Six weeks later the glands were removed from the left side of the neck. There was no recurrence two years after diathermy.

Case 12.

A man, aged 72, had noticed "a little bladder" on the roof of the mouth for six weeks. He was a moderate smoker (wooden pipe). An epithelioma of the roof of the mouth was found on examination; there were no enlarged cervical glands. The growth and its surroundings were thoroughly destroyed by diathermy, and there was no recurrence one year and ten months after operation.

Case 13.

A man, aged 69, had noticed dryness of the throat for four months; the teeth were very foul and he smoked about 3½ ounces of tobacco a week. An epithelioma was found involving the left tonsil and extending to the anterior pillar and soft palate; the tongue showed leucoplakia. The growth was diathermized, an enlarged gland in the neck was removed for examination, and the external carotid was tied; the gland was found to be inflammatory. There was no recurrence one year and eight months after operation.

Case 14.

A very old gentleman, aged 75, was found to have a large epithelioma of the right tonsil, extending on to the mucous membrane covering the lower jaw. The patient refused to have the glands removed, but he consented to preliminary ligature of the external carotid, which was carried out, together with a thorough diathermy of the primary growth. The patient made a speedy recovery, and there was no recurrence one year and seven months after operation.

Case 15.

A woman, aged 71, had an epithelioma of the right side of the tongue and adjoining portion of the floor of the mouth, adherent to the lower jaw. There were enlarged glands in the neck. The growth was thoroughly removed by diathermy, and subsequently the glands were removed from both anterior triangles. There was no recurrence one year and four months after the operation. It will be noted that this was a case of carcinoma of the tongue occurring in a woman.

Case 16.

A man, aged 38, was found to have a carcinoma occupying the whole of the right antrum. The bone was so extensively involved that it was found impossible to remove the tumour completely, and the growth was therefore scraped away with a sharp spoon, and the whole of the cavity subjected to diathermy. A fistula subsequently resulted, and it is hoped at a later date to close the fistula by a plastic operation. There was no recurrence over two years after diathermy.

Case 17.

A man, aged 64, complained of difficulty in swallowing for a month, and of pain in the region of the back of the tongue. He smoked 1½ ounces of tobacco a week, was a heavy drinker at one time, but had been temperate for the last ten years; he was in the habit of drinking very hot tea; his teeth were very septic. A carcinoma of the uvula and soft palate was found, involving the upper extremity of the anterior faucial pillars on both sides. The growth was freely destroyed by diathermy, and although no enlarged glands were felt, the anterior and posterior triangles on both sides were cleared out by "block" dissection. There was no recurrence two years after operation.

REPORT ON A CASE OF DIABETES TREATED WITH INSULIN.

BY

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AND

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THE following observations were made in co-ordination with the scheme of work arranged by the Medical Research Council at various hospital centres.

A man aged 47 was selected as a moderately severe case of diabetes mellitus, who had been observed with some detail over a period of eight years. He was an officer in a Highland regiment and noticed thirst and polyuria a month after the outbreak of war; but he could, at that time, march twenty-five miles. Four months later (January, 1915) he went to Belgium, was speedily exhausted, sent home in February, and came to Duff House, Banff, in March. Since then he has been readmitted five times. He is accurate and conscientious, and has, in the intervals, followed the régime prescribed by his medical advisers here and at home.

In the eight years this patient has been observed under each of the three methods of treatment which have been in vogue in the present generation—namely, (1) restriction of carbohydrate, without restriction of other foodstuffs; (2) the fasting treatment, with subsequent restriction of all foods; and (3) insulin.

Table I gives the weight, state of the urine, the blood sugar, and the calories and carbohydrates in the food at the beginning and the end of each of his former visits to Duff House.

The ascertained maximum tolerance, without glycosuria, for calories and carbohydrate at each visit is shown in Table II.

TABLE II.—*Showing the Maximum Tolerance for Carbohydrate and Calories on the same Five Occasions.*

Year.	1915.	1918.	1919.	1921.	1922.
Calories ...	3,190	3,176	2,334	2,304	935
Carbohydrate	56	61	166	127	25
Glycosuria ...	0	0	0	0	0

The table shows that the complaint was at first of a mild type and responded well to treatment; but the deterioration of tolerance is clearly seen. In the last two years especially the patient has found increasing difficulty in keeping anything like sugar-free. His present occupation is not exacting, entailing mainly the duties which fall to the lot of a country gentleman of moderate means and quiet tastes who looks after his garden and animals. But he had been less able to do work and had become progressively more miserable and depressed of late.

The insulin used at first for this patient was prepared here by one of us (A. J. Leigh), who had the advantage of seeing the method carried through at the National Medical Research Council laboratories at Hampstead, and would like to acknowledge his indebtedness to Drs. Dale and Dudley. The mode of preparation was that of Collip, modified by Dale and Dudley. In one point we varied the procedure; this was that we got the use of a small building at the slaughterhouse and minced the fresh pancreas directly it was taken out of the animal, adding the alcohol on the spot and transferring the mixture to the laboratory afterwards. On May 9th and

TABLE I.—*Showing the Condition on Admission and on Leaving on Five Previous Occasions.*

Date.	Weight in Kilos.	Glycosuria. Grams in 24 hours.	Ketonuria as Acetone). Grams in 24 hours.	Blood Sugar Percentage.	Diet.		Treatment.	Remarks.
					Calories in 24 hours.	Carbohyd. Grams in 24 hours.		
1915.								
March 24 ...	72½	15	Trace	0.17	2,800	25	Strict diet till glycosuria remained steady; then carbohydrate tests	
May 19 ...	74	4	Small amount	0.16 (May 17th)	3,000	80		
1918.								
March 16 ...	67	0	0	0.15	3,000	25	Returned for a week for observation	With steady restriction of carbohydrate urine had become sugar-free.
March 21 ..	67	0	0	0.12 (Mar. 22nd)	3,064	41		
1919.								
July 4 ...	74½	Trace	0	0.12 (July 6th)	2,904	73	Returned for further tests. Carbohydrate gradually increased	Tolerance had improved still further.
August 19 ...	70½	0	0	0.17	2,197	138		
1921.								
May 2 ...	62½	12	Trace	0.13	1,535	27	Fasting and limitation of total food	In interval fasting treatment had been started owing to much glycosuria and feeling out of sorts. Tolerance reduced, but good.
June 23 ...	62½	0	0	0.16 (June 24th)	2,393	105		
1922.								
March 21 ...	63	74	Trace	0.14	1,947	11	Limitation of diet (less drastic towards end)	More ground had been lost. Patient insisted on increase of diet beyond his tolerance, contrary to advice.
April 14 ...	63	86	0	0.26	2,556	63		

10th the insulin used was that supplied from the British Drug Houses. We tested this material on rabbits for comparison with our own insulin.

The details of the experimental period of administration of insulin are shown in the accompanying charts.

Experimental Period.

The patient had been upon a fairly constant diet. A similar diet was continued for these observations, and for the first eleven days (April 19th to 29th) it was fixed both in quantity and quality, except that carbohydrate was added experimentally on two days. The diet contained carbohydrate 17, protein 133, fat 98; calories 1,430. The carbohydrate addition consisted of 60 grams of white bread on the 20th and 23rd. The blood sugar was estimated hourly from 8 a.m. to 9 p.m. for the first five days—that is, fourteen times a day. Later it was taken three times a day—at 8, 12 and 6.30.

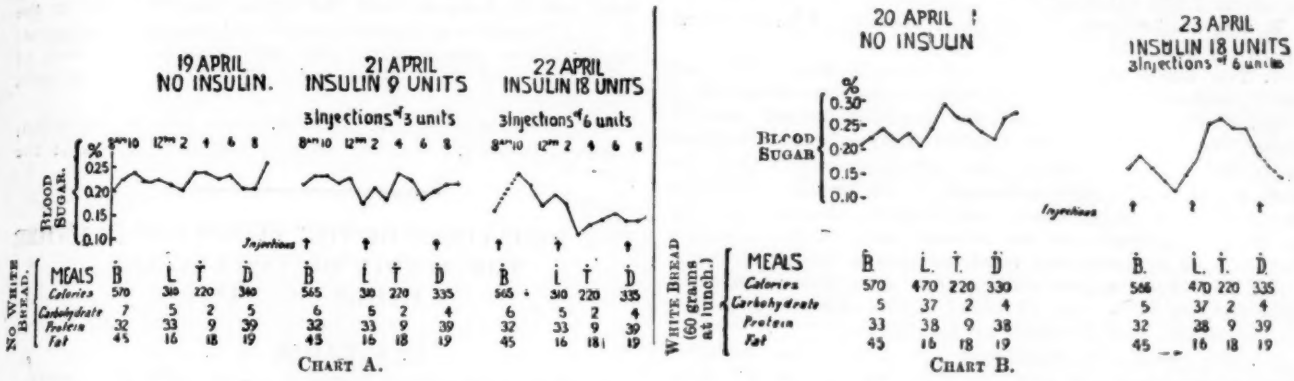
19 APRIL
NO INSULIN.
21 APRIL
INSULIN 9 UNITS
3 injections of 3 units
22 APRIL
INSULIN 18 UNITS
3 injections of 6 units
20 APRIL
NO INSULIN
23 APRIL
INSULIN 18 UNITS
3 injections of 6 units
BLOOD SUGAR.
Injections
NO WHITE BREAD.
WHITE BREAD (60 grams at lunch.)
MEALS B L T D
Calories 570 310 220 340 565 310 220 335 565 310 220 335 570 470 220 330 566 470 220 335
Carbohydrate 7 5 2 5 6 5 2 4 6 5 2 4 5 37 2 4 5 37 2 4
Protein 32 33 9 39 32 33 9 39 32 33 9 39 33 38 9 38 32 38 9 39
Fat 45 16 18 19 45 16 18 19 45 16 18 19 45 16 18 19 45 16 18 19

CHART A. CHART B.

In the records of the case the following points are to be noted.

1. A reduction of the general level of the sugar in the blood after insulin was given, noticeable with 9 units (3 rabbit doses) in three hypodermic doses a day (see Chart A), considerable with 18 units in three doses, and later with 12 units in two doses a day. The effect was greatest four hours after a dose. With repeated meals the sugar was rising high again eight hours after a dose, though not so high as it had been on the same diet without insulin. The effect of the insulin was also definite the following morning, as the blood sugar, on a constant diet, was not so high when insulin had been given the day before. (Chart C; compare 8 a.m. blood sugar on 28th and 29th with that on the 19th, 20th, and 27th.)

2. On the addition of 30 grams of carbohydrate (60 grams bread) to the mid-day meal (April 23rd) immediately after the mid-day dose of 6 units of insulin (Chart B) the percentage of blood sugar rose sharply and remained high for three hours. The rise was of the same character as that obtained by giving the same dose of carbohydrate on a non-insulin day; it was, indeed, though not absolutely so high, relatively more pronounced on the insulin day, but allowance must be made for the fact that the general level of the blood sugar was lower. Such a flooding of the blood with sugar immediately after carbohydrate food is a normal phenomenon which is exaggerated in diabetes. It is hardly to be expected that insulin, at all events in a small dose, would affect it. There was, of course, also a rise of blood sugar after meals of protein and fat, but it was less high and much slower. In view of these facts it appeared wise to make additions to the diet in the form of protein and fat and not of carbohydrate.

3. The sugar in the urine (Chart C) fell from round about 50 grams a day to zero, reappearing when insulin was discontinued and falling again when it was resumed.

4. The acid bodies, expressed as acetone (estimated by van Slyke's method), totalled about 4 grams a day. With 12 units of insulin daily this was reduced to less than 1 gram. The curve of acid bodies shows a reduction, to be expected, apart from insulin, on the two days on which extra carbohydrate was given. The reduction of acidosis is shown also by the figures for the ammonia in the urine. The percentage of the total nitrogen in the urine which was in the form of ammonia fell from 7.4 per cent. to below 5 per cent.—a normal level—as soon as insulin was given, and has remained about that figure since.

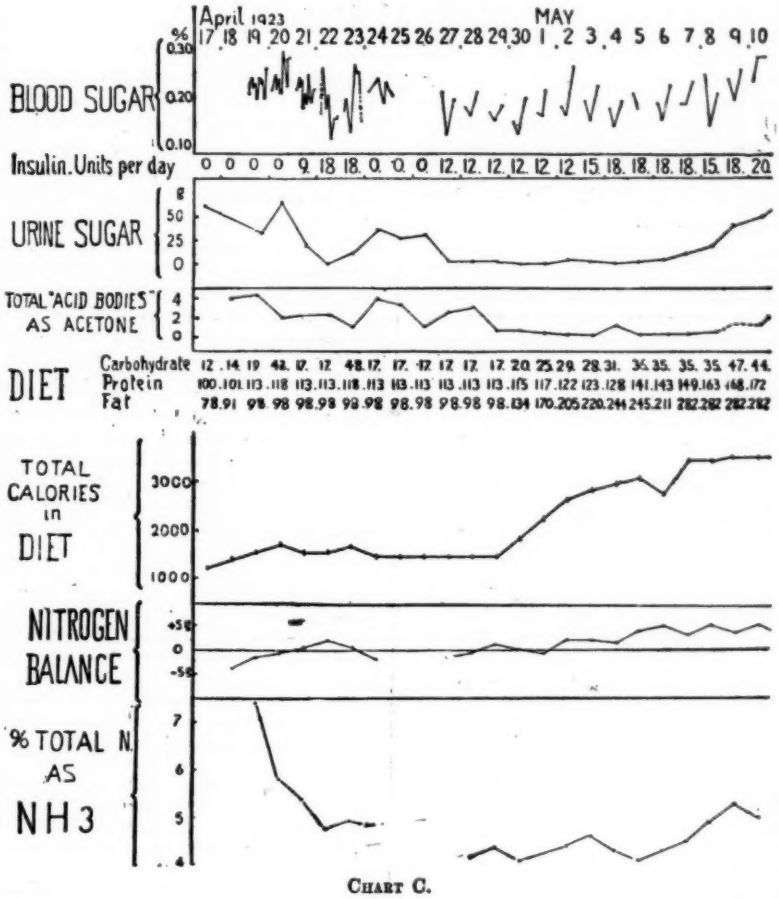

CHART C.

5. For over a year it had not been possible for this patient to take food of the value of more than about 1,000 calories a day without sugar appearing in the urine in varying quantity. With 12 units of insulin a day in two doses he took 2,500 calories with no sugar in the urine, or traces only. With 18 units he took over 3,000 calories with less than 10 grams of sugar in the urine. Insulin enabled him, therefore, to reach a new and much higher level of tolerance.

6. When insulin was given the nitrogen balance became positive. When insulin was omitted it became negative again.

7. With experimental increase of food, chiefly protein and fat, up to 3,500 calories—that is, above the new level of tolerance with 18 units of insulin—there was a rise of

blood sugar and of sugar in the urine to about the same level as had been reached without insulin on a diet of 1,400 calories. There was also an increase, though a smaller one, in the total acid bodies. The nitrogen balance continued positive up to as much as +5 grams a day. After the above-mentioned excess of food was given, in a further fortnight of observation, not shown on the chart, the insulin was increased and the total food was reduced to about 2,500 calories.

8. The patient's weight increased steadily; 8 lb. were put on in six weeks of treatment.

9. The blood sugar was never brought below 0.11 per cent., and no symptoms of hypoglycaemia were observed.

10. The respiratory quotient was determined several times, but in this case similar figures were obtained with and without insulin. The reflection occurs that the case might not be severe enough or the dosage of insulin large enough to produce considerable changes in the quotient; especially as no attempt was made to enable the patient to assimilate much exogenous carbohydrate.

11. The investigation showed that a suitable régime for this patient is a diet of about 2,500 calories with low carbohydrate, and 30 units of insulin daily.

12. The change in appearance and attitude to life after insulin was given was unmistakable, and was remarked by the members of the staff, who, of course, know the patient well. He grumbled sometimes, as anyone might, at having to have injections and still having to look after his diet, but was interested in his various pursuits and had a look of health and keenness.

It was advised that 20 units of insulin be given just before breakfast and 10 before the evening meal, the smaller dose being given in the evening to avoid reducing the blood sugar too much in the night. This patient when at home sometimes prefers to omit lunch and make two main meals a day, with a little tea in the afternoon. In that case it was advised that the insulin should be given in two equal doses just before the two meals.

The fasting days formerly practised were omitted, but he was advised as a safeguard to take half quantities of food on one day a week. Progress will be watched, and an occasional fast day prescribed if needed.

The following is an example of a day's diet of about 2,500 calories as taken by this patient.

Diet taken on May 26th, 1923.

	Grams.					Cal.	Grams.		
	B.	L.	T.	D.	Total.		Carb.	Prot.	Fat.
*Duff House casein bread	30	15	30	15	90	196		47	
Milk	105		105		210	156	11	7	9
Butter	20	10	20	10	60	476		1	51
Cheese		30		30	60	270		17	22
Eggs	2	1		2	5	400		34	29
Fish—lemon sole ...				120	120	107		25	1
Bacon	60				60	320		10	30
Meat — lean beef — stewed		90			150	293		36	16
Filleted steak				60					
Vegetables—									
Cabbage	280				280	58	8	5	1
Tomato (raw) ...	150				450	101	16	5	2
Lettuce (raw) ...			300						
Kale		400			400	76	4	14	
Asparagus				400	400	92	10	12	
Keiller's sugarless marmalade or jam	30		30		60	9	2	1	
Tea	340		340						
Clear meat soup ...				200					
						2,554	51	214	161

* *Lancet*, 1921, ii, 950; BRITISH MEDICAL JOURNAL, 1921, ii, 707; also *Duff House Papers*, vol. i, Oxford Medical Press, 1923.

It will be noticed that in most cases the weights are given in multiples of 30 grams or cubic centimetres, so that the corresponding number of ounces can be approximately calculated by dividing by 30.

Summary.

In a detailed study of a moderately severe case of diabetes in which tolerance had been diminishing for the last three years, it was found that with the help of two daily hypodermic injections of insulin, on a measured diet, the excess of sugar in the blood, the sugar in the urine, and the acidosis could be controlled; also that the patient could take more than double the amount of food he had previously been able to take without the appearance of sugar in the urine. Regulation of diet is still needed, for if an excess of food was taken above the new and higher level of tolerance, the hyperglycaemia, glycosuria, and acidosis reappeared.

The treatment led to improvement in the nutrition, physical capacity, mental outlook, and appearance of the patient.

THE BEHAVIOUR OF THE BLOOD SUGAR UNDER THE ACTION OF INSULIN AND OTHER AGENTS.

BY

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IN view of the failure to demonstrate any action of insulin on the oxidation of glucose *in vitro* either in presence of defibrinated blood, muscle juice, a combination of these, or pus,[1] it seems likely that its action is indirect. Winter and Smith[2] have recently published some experiments which led them to the conclusion that there is present in normal blood a kind of sugar differing from an equilibrated mixture of the α, β varieties in having a lower specific rotation. They fail to find any evidence of this in the blood of diabetic patients, and consider that the diminished carbohydrate metabolism of the diabetic is due to the lack of this more reactive form. It became of interest, therefore, to see if their results could be repeated and to study the effects of epinephrine and insulin. The following is a preliminary account of some of these experiments. No interpretation will be attempted.

Method.

Both dogs and rabbits were used. The rabbits were killed by knocking on the head and bled from the carotid artery; two were used in each experiment. In the case of dogs, blood was removed, either from the heart or femoral artery. The blood so obtained (usually 100 c.cm.) was treated as described by Winter and Smith—namely, diluted with seven volumes of water and precipitated with one volume each of 10 per cent. sodium tungstate and 2/3 N. sulphuric acid. It was filtered first through coarse filter paper, then through a Whatman No. 40 or 42. It was then evaporated to dryness under reduced pressure (water pump), using a capillary to prevent bumping, the temperature of the water-bath surrounding the boiling fluid being kept between 30° and 40° C.; 100 c.cm. of 85 per cent. alcohol was then added (proportionately less when less blood was taken) and the mixture let stand for twenty minutes. It was then filtered into a smaller distillation flask, and the extraction repeated with half the volume of alcohol. This was filtered in the same way, and both filtrates were united and evaporated to dryness as before. The residue was then taken up in distilled water, filtered through a No. 50 Whatman paper, and placed in a polarimeter tube. Readings were made on successive days.

The polarimeter used was a half-shade instrument made by Schmidt and Haensch. Successive readings did not vary more than 0.04°. The average of ten readings was taken. Sodium light was used. The tubes were 1.894, 2, and 2.2 cm. in length.

The copper-reducing value was obtained by the method of Shaffer and Hartmann, using the fluid in the polarimeter tube after the completion of the experiment. Blood sugar estimations were made by the same method. The epinephrine and insulin were administered subcutaneously.

Results.

A general table of the results is given. No experiments are omitted except those in which the polarimeter reading was impossible on account of the opacity of the solution.

(*a*) *Normal.*—With the rabbit three experiments were done. In one of these the rotation gradually rose to a value corresponding to the reducing power. In the others there was little or no change, but the rotation found was markedly lower than that calculated from the reduction. With the

No.	Animal.	Remarks.	Blood Sugar, mg. per 100 c.cm. when sample taken.	Readings on successive days. Degrees.	Reading calculated for reduction. Degrees.	$[\alpha]_D$ of lowest reading. Degrees.	Volume of Blood taken.	Time required by process.
							c.cm.	hrs.
1	Rabbit	Normal	—	0.07, 0.07, 0.17, 0.17	0.17	21	100	6
2	,,	,,	—	0.03, 0.10, 0.07, 0.10	0.17	25	85	6½
3	,,	,,	—	0.03, 0.10, 0.10	0.20	27	100	7½
4	Dog	,,	—	? 0.07, 0.18, 0.20, 0.18	0.21	18	100	9
5	,,	,,	—	0.07, 0.15, 0.20	0.21	18	100	9
6	,,	,,	—	0.23, 0.25, 0.30, 0.31, 0.31	0.30	39	95	—
7	Rabbit	Epinephrine	300 & 400	0.58, 0.55, 0.53, 0.53	0.50	56	75	6½
8	Dog	Struggling	222	0.28, 0.28, 0.28	0.34	43	100	7½
9	,,	Epinephrine	117	0.20, 0.20, 0.20	0.21	47	100	10½
10	,,	,,	230	0.63, 0.61, 0.70, 0.70, 0.68	0.70	48	100	—
11	,,	Epinephrine + insulin	300	0.08, 0.15, 0.28, 0.31, 0.28	0.20	22	100	10½
12	,,	,,	240	0.38, 0.50, 0.47	0.50	39	100	—
13	,,	,,	145	0.17, 0.25, 0.23, 0.23	0.13	66	100	5½
14	,,	,,	176	0.22, 0.16, 0.18, 0.16, 0.16	0.20	42	100	6½

For the calculation of rotating power from reducing, $[\alpha]_D = 52.5$ was used.

dog also three experiments were done. In each of these there was a gradual rise in the rotating power until it coincided with that calculated from the reducing power.

(*b*) *In Hyperglycaemia.*—One experiment was done on a rabbit. Here there was a fall in the rotating power until it reached a value equal (within the limits of error) to that calculated from the reduction. In the three experiments on dogs two showed no change in rotation, although one of them was a little below the value calculated from reduction. In the third there was a slight rise to this value.

(*c*) *Following Insulin and Epinephrine.*—In these experiments 5 c.cm. of 1 in 1,000 adrenaline was given in diluted divided doses, followed by insulin, the blood being taken about half an hour later. In all but one of these there was a rise in the rotating power, which in two cases was considerably greater than the rotation calculated from reduction. The specific rotations for the lower readings recorded have been calculated. For normal blood they are very low (with one exception) and do not approach that of α, β glucose. For blood with epinephrine hyperglycaemia they are in the neighbourhood of that for an equilibrated mixture of α, β glucose, but show a tendency to be low. After epinephrine and insulin, in spite of the hyperglycaemia two of them are about the same as for normal blood.

Experiments were made to see if alcohol in acid solution had any effect on pure glucose. These were uniformly negative, although the acid alcohol was warmed with glucose in the presence and absence of phosphate for periods of the same length and much longer than those in the experiments with blood filtrates.

My thanks are due to Professor A. Hunter and Professor J. J. R. Macleod, under whose direction the experiments were done.

[It would be rash at the present juncture to conclude that the highly reactive forms of glucose, called gamma glucose, are necessarily responsible for these results. The long and complicated chemical procedure used to prepare the solutions for the polariscope may be responsible for the production of substances with a lower rotating power. The slowness of the change in rotating power (intervals of days), also, does not suggest the presence of a highly reactive substance. Further investigation will therefore be necessary before the important hypothesis suggested by Winter and Smith can be considered as established.—J. J. R. M.]

REFERENCES.

[1] Eadie, Macleod, and Noble: *Amer. Journ. Physiol.* (in press).
[2] Winter and Smith: *Journ. Physiol.*, 1923, lvii, 100; BRITISH MEDICAL JOURNAL, January 6th, 1923; Ibid., April 28th, 1923; Ibid., May 26th, 1923.

A CASE OF ACTINOMYCOSIS WITH RECOVERY.

BY

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THE following case is worthy of record on account of certain interesting clinical features which it presented, but especially for the extraordinary recovery which occurred.

A man, aged 22, was admitted to the David Lewis Northern Hospital, Liverpool, on October 8th, 1922, with a history of lobar pneumonia on board ship while crossing from Canada to England; crisis was said to have taken place. The temperature chart which accompanied the patient showed that the maximum temperature had been 103.8°, and that on the fourth day it had fallen to 100°, rising to 101° on the sixth day, and falling to normal on the seventh day (the day before his admission to hospital).

On admission the temperature was 100°, the pulse was 120, and respirations 56. He was cyanosed, exhausted, and had marked dyspnoea. Signs of fluid were detected in the right pleural cavity, and percussion over the right lung caused pain, a common sign of empyema. Exploration of the right chest yielded fluid, and an hour later a rib was resected and the pleura drained. The fluid withdrawn was serous with a flaky deposit, but was not definitely purulent. Pathological examination of the fluid revealed nothing.

The patient's general condition did not improve, though the wound drained freely and only fluid of a serous nature exuded. The pulse rate varied from 100 to 120, the temperature was normal, but the dyspnoea became more and more urgent. The pleural cavity was probed with the hope of finding a loculation of fluid, but without result. The respirations reached 60, and death appeared imminent. With great difficulty Dr. Oram made an *x*-ray examination, and reported: "The whole of the lower part of the chest on the left side is opaque, the upper border of the opacity following the line of the sixth rib. I fear that it is not possible to say whether this is fluid in the pleura, heart shadow, or pericardium."

On October 14th the patient still appeared to be on the point of death, and it became increasingly evident that the dyspnoea was due to mechanical obstruction and not to a general toxaemia. The cardiac dullness was greatly increased, but breath sounds could be heard clearly all over the dull area, while the heart sounds too were distinctly audible in the region of the nipple. No pericardial friction sound could be heard. Dr. John Owen of the Royal Infirmary saw the patient in consultation, and it was decided that there must be some mediastinal swelling, possibly a pericardial effusion covered by a thin shell of lung. Such a diagnosis was the only possible explanation of the anomalous physical signs, and yet there was the fear that the dullness might be due to a dilated and displaced heart. Exploring needles were inserted, but with such caution that nothing was found.

During the evening, on hearing that the patient was, if possible, worse and unlikely to live till the morning, the pericardium was explored under local anaesthesia, and about 25 ounces of sero-purulent fluid were allowed to escape. Through the incision in the pericardium a typical "bread-and-butter" appearance of the heart could be seen. The fluid was examined bacteriologically, but all cultures were sterile. The patient was very collapsed, but next day his condition improved, though he was still very dyspnoeic.

On October 19th, signs of a pleural effusion on the left side having developed, the cavity was tapped, and 21 ounces of clear fluid were withdrawn; the pathological report on this fluid was: "No tubercle bacilli or other micro-organisms found. Numbers of lymphocytes and lymphoid cells present." Abdominal distension now occurred, but yielded to eserine and pituitrin.

About October 18th it was noticed that the character of the discharge coming from the right pleura and the pericardium had changed, and that it was now thick and yellow. The discharge was examined by Professor Glynn at Liverpool University, and in the material from the right pleural cavity numerous actinomycosis organisms were found. Attempts were made by Professor Glynn to cultivate the organism anaerobically in order to determine its type, but unfortunately the streptothrix would not grow. The sputum was repeatedly examined for the ray fungus, but always with negative results. The pericardial fluid yielded a pure culture of *Staphylococcus aureus*.

The patient still remained in an extremely critical condition; the temperature was intermittent, the pulse rate remained high, and the respiration rate averaged about 50. It was decided that the only hope of saving the patient's life lay in giving iodine as intensively as possible. Accordingly the following treatment was instituted: (1) The right pleural cavity and the pericardium were irrigated twice daily with a solution containing collosol iodine (Crookes). (2) Potassium iodide was given by mouth (25 grains three times daily), but later this was changed to iodopin 1 dr. thrice a day. (3) Collosol iodine was given intravenously. The doses were as follows: 10 c.cm. on the first day; 20 c.cm. on the third day; 30 c.cm. on the fifth day; 50 c.cm. on the seventh day; and 80 c.cm. on the ninth day. This maximum dose was repeated at two-day intervals so long as any non-thrombosed veins could be discovered. It is interesting to note that no symptoms of iodism appeared during the course of the treatment. During all this time the patient was very ill and his dyspnoea and intermittent fever continued.

On November 2nd *x*-ray examination showed that the chest was much clearer; on November 14th the temperature showed signs of settling down, and a few days later became normal. The discharge from the drainage tubes became less and less, and the ray fungus more and more difficult to find. Early in December it was decided to give the patient an autogenous vaccine of *Staphylococcus aureus* derived from the pericardial discharge; injections of this vaccine caused a great reaction, and the empyema wound began to give trouble again. A probe discovered loculated pus, and its removal gave great relief. Again abdominal distension occurred, and albuminuria, which had been present before, became more marked. About December 12th it was obvious that the patient had developed acute nephritis. The urine diminished to 16 ounces in twenty-four hours, and general anasarca with ascites appeared. The urine was examined by Dr. H. S. Pemberton, who reported: "Protein in very large quantities (vast preponderance of serum albumin over serum globulin). All kinds of casts—epithelial mainly—leucocytes and red blood corpuscles present." Paracentesis abdominis was performed on three successive occasions, and 31, 32, and 28 ounces respectively were withdrawn. The fluid was yellow, contained no organisms, and coagulated on standing. Shortly after this the urine cleared up, the anasarca disappeared, and the patient became comfortable again, although the respiratory rate still varied between 36 and 44.

From this time onwards the patient never looked back. Between December 24th, 1922, and February 6th, 1923, he gained 30 lb. in weight. Repeated radiograms were taken, and all showed a great and increasing improvement in the chest condition, though the right diaphragm remained raised.

The serum Wassermann reaction was completely negative, and blood urea estimation showed 15 mg. per 100 c.cm. of whole blood.

On his discharge from hospital on February 13th, 1923, the condition was as follows: General condition very good, no fever, urine contains a slight trace of albumin. The drainage wounds are all healed except for a very small sinus in the pericardial incision. The heart appears normal except that the apex beat is about half an inch outside the nipple line in the fifth space.

As regards the further progress of the case extracts from the patient's letters are interesting. On March 6th, 1923, he wrote to say that he was as well as he had ever been before his illness, but that the sinus was still discharging a bead of pus. This was dressed and potassium iodide was taken regularly.

On May 16th he reported that the sinus was healed, and that he was so well that he intended to resume his work in Canada.

Remarks.

How and where the actinomycosis infection was contracted is a complete mystery. The man was employed in a cardboard box manufactory in Canada, and previous to that had been in the army and had seen active service on many fronts. While on military service he had looked after horses, and it is possible that the infection was contracted at that time and that it had remained dormant until his attack of pneumonia. It is certain that the infection was quite recent so far as its clinical manifestations are concerned, for the man was in apparently normal health on sailing from Canada. Whether the original focus was in the liver with extension to the lung through the diaphragm, or whether it was primarily pulmonary, it is impossible to say.

The patient's recovery was little short of miraculous, as on many occasions his life was despaired of. Despite recent criticisms upon the potency of collosol iodine, it would appear that in this case the drug was of great value and played an important part in the recovery. It is, of course, impossible to draw conclusions from one case, but we feel that by publishing this note other workers will be encouraged to persevere in more intensive iodine treatment in the fight against this almost mortal infection.

There can be no doubt that the very recent infection in this case, together with the patient's extraordinary pluck and vitality, were most important factors in his recovery.

In conclusion our thanks are due to Mr. Rawlinson for his surgical procedures and to the numerous colleagues who aided and encouraged us in what appeared to be a hopeless battle.

SUCTION IN THE TREATMENT OF SEPTIC EARS.

BY

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IT is essential that the practitioner, who in almost all cases has the patient suffering from a discharging ear under his treatment for some time, it may be for months, should realize the disadvantage, not to say danger, of aural syringing. He sees the patient in the earliest stages, and has a much better opportunity than the specialist, who commonly only comes on the scene after the trouble has been long established or complications have arisen.

The intricate anatomical arrangement of the middle ear and its accessory recesses is favourable to bacterial activity. The best known methods of combating bacillary ravages in this region, other than a surgical operation, consist of forcibly syringing out accumulated discharges, and the instillation of antiseptic drops. But the risks involved in syringing out the middle ear in the presence of a chronic discharge are very great. This is aptly illustrated in the case of cholesteatoma. Even the advocates of forcible syringing invariably add a word of caution when dealing with this. Usually, in cholesteatoma, especially if it has arisen, as is almost invariably the case, after prolonged sepsis, there is found an enlargement of the normal aural cavities and mastoid cells, and any watery lotion, if powerfully injected, can easily be driven far afield into the recesses. The effect of syringing is to cause swelling of the semi-desiccated accretions and accumulations, and pressure on the surrounding brain and labyrinth. All watery fluids encourage septic change and bacterial growth.

I have seen many cases in young children, in whom the syringing of running ears has been ordered, where the immediate result of a more than usually forcible injection by the child's mother has been acute mastoiditis and abscess. Indeed, but few cases of acute mastoiditis in children have come under my notice where syringing has not been the customary treatment, with the result that an immediate cortical mastoid operation which might otherwise have been unnecessary was rendered imperative. I cannot, therefore, condemn syringing too emphatically. I wholly disapprove of syringing the ear in the presence of a discharge. I order my patients boracic wool, with directions to twist it up and to wipe out the ear as often as necessary. Syringing may have the effect of driving the sepsis further afield, and on into the most dangerous positions, such as the attic, aditus, antrum, and mastoid cells, becoming in this manner a cause of abscess over the mastoid region. Owing to my dissatisfaction with all forms of ablution and irrigation, and with much of the instillation of ear drops that is still so popular, I have for some years been employing suction to get rid of discharge from the ear and its annexes. This suction method of thoroughly clearing the septic ear of discharge is so successful, that I am anxious to bring it prominently to the practitioner's notice, who, as he sees these patients in the earliest stages of the trouble, can adopt it with more telling effect. The suction method is so easily applied and is so safe and effective that it is eminently adapted to the use of the busy and overworked medical man; and, if adopted by him, would serve to prevent so many septic ears drifting into a serious condition and the patient having to be sent

suddenly to hospital for operation. It is where such emergency operations have to be performed, always in a dirty pus-saturated field, that fatal complications such as septic meningitis are likely to arise.

The simplest method of applying suction to the aural cavity is to attach to the nozzle of a medium-sized glass syringe or a larger metal syringe a short length of rubber tubing which must be inserted into the ear, the piston being drawn out to allow all purulent material to be sucked away. The action is the reverse of syringing, and the addition of the rubber tubing precautionary. Until the ear is dry this method must be repeated with the aid of a good reflected light, which is always desirable. The use of a motor suction pump, with special fine pointed glass tubes bent in several directions, under a good light is a more elaborate and effective method. These tubes may be inserted, under a good light, into the many recesses of the tympanic cavity, up into the attic, down into the depressed floor of the tympanic recess, and back into the aditus.*

For acute otitis media following paracentesis tympani, all the pus from the middle ear may be sucked out by inserting a finely pointed tube into the incision of the membrana tympani. This treatment, added to the application of bell-shaped dry cups over the mastoid, I continue at intervals for forty-eight hours, a mastoid operation being thereby avoided, provided the treatment is used without delay during the inflammatory and congestive stages.

For chronic aural suppuration suction is employed in the ear, over the mastoid, and over the site of the exit of the mastoid vein passing out directly from the lateral sinus; it should be repeated once or twice or even thrice a day for at least one month. This method, when carefully carried out, has, with very few exceptions, the effect of avoiding operative treatment. The system of suction is the means of clearing the ear of discharge so effectively, that it prepares and secures a clear field for operation, should this be necessary, and prevents the most dangerous complication—septic meningitis.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF BLASTOMYCOSIS.

THE following case, which was reported to the Norwich Medico-Chirurgical Society, seems of sufficient interest to warrant publication.

Mr. R. first consulted me on May 12th last with regard to an eruption on his face. A casual glance gave the impression that he was suffering from impetigo contagiosa, but on closer inspection and after listening to the history I was forced to alter my opinion. He was in Germany for a considerable period and returned home at the end of November last. Shortly afterwards he had what he described as a boil on the left-hand corner of his mouth; the boil never came to a head, nor was there a slough. As far as I could gather, the usual methods of impetigo treatment had been tried, and failed. Being suspicious that this might be a case of fungus infection, before attempting any treatment I sent him to the County Pathological Laboratory for a report, which was negative in so far as the fungus was concerned. Starch poultices were applied, and after the hard scabs had been removed the resemblance of the condition to the illustration facing page 294 in the latest edition of Norman Walker's *Dermatology* became so strikingly obvious that, being convinced that this was a case of blastomycosis, I again sent him to the laboratory for a report. The second report, together with Norman Walker's description of the condition, I think, clinches the diagnosis.

Dr. W. B. Christopherson's report is as follows: Examinations have been made by the caustic potash method, Gram, and other stains. The films were complicated by the presence of starch granules, but structures strongly resembling blastomyces are present. By the caustic potash method a few double-contoured bodies are seen (apparently not starch granules), as found in Gilchrist's cases. These he named *Oidium coccidioides*. There appears to be strong evidence either of blastomycosis or of a closely allied granulomatous condition.

Norman Walker points out that in his first edition he referred to this condition as a rare form of tuberculosis, of which he had seen two or three cases.

During the last few years several cases have been observed, particularly in America, and pathological examination has led to the discovery of a yeast fungus in considerably over half the cases. The affected part was covered with a number of contiguous papillomatous elevations, which were more prominent at the margins and from between which pus exuded. The change from the diseased to the normal skin was very abrupt, the condition having a well defined margin.

I did not notice, probably for want of careful observation, the presence of the halo mentioned by Walker, nor was I quite satisfied that the margin had a bluish-red sloping border. I may mention that Mr. R. is a lover of horses, and I think it probable that this is how the infection arose.

I prescribed fairly large doses of potassium iodide internally. Leaving the small patch on the forehead as a control, I applied local treatment to the corner of the mouth, the left nostril, and to the patch at the junction of the cheek and left wing of the nose. The local treatment consisted of starch poultices to remove the scabs, followed by a thorough swabbing with "Fecto," a concentrated form of Dakin's solution made by Parke, Davis. It was found that although the scabs in the centre of the lesion could be removed by this method, those on the margin were more tenacious and had to be scraped off with a sharp spoon.

To date the scabs have ceased to re-form, the purulent discharge has come to an end, and the centre of each patch is beginning to assume the appearance of healthy skin, whereas the small patch on the forehead has not been modified.

In conclusion I would point out that the prognosis is not good. In some instances death has occurred. No actual case of cure is reported, and so far modification of the condition has been the only result of treatment, according to Norman Walker.

Coltishall, Norfolk. F. SUGDEN, M.B., Ch.B.

INFLUENZA COMPLICATED WITH ACIDOSIS AND RASH IN A CHILD.

I WAS asked to see a girl, aged 6, who complained of headache. She had always been healthy, except for a definite history of acidosis with coma and vomiting three years previously.

The temperature was 103° F., the pulse 130, and the respirations 20. The conjunctivae were injected, the tongue of strawberry type, the throat somewhat sore, and the cervical glands of both sides enlarged but not tender. The heart was normal. The breath sounds were bronchial and a few scattered râles were present. The reflexes were normal, but the patient was listless and irritable. There was no vomiting or diarrhoea. The urine was intensely acid but free from albumin.

The clinical features of the case were those of uncomplicated influenza.

The treatment was on simple lines. Solid food was withheld, and water was freely given, together with a mixture containing potassium citrate and ipecacuanha wine. Ten grains of aspirin were given over a period of two days.

On the third day a rash appeared. Bright red papules and macules encircled the neck, extended behind the ears, and covered the flexor surfaces of the arms, the inside of the thighs, and the buttocks. The rash presented some of the characteristics of the rash of measles and of scarlet fever, but was not typical of either. It was very irritable, and in places became raw and painful. The temperature and pulse rate remained high, but the general condition was good.

In view of the history the question arose whether the case was one of acidosis or an aberrant type of scarlet fever or measles. Dr. Foord Caiger, of the London South-Western Fever Hospital, kindly saw the patient with me five days after the onset of illness. He was of opinion that the rash was not that of any of the exanthemata, but was due to acidosis. Cold sponging, large quantities of water, and full doses of sodium bicarbonate (15 grains every four hours) were ordered, and in forty-eight hours the pulse and temperature were normal, and the rash had faded.

There seems no doubt that the patient had really suffered from influenza. Her young brother had simultaneously a

* Messrs. Allen and Hanburys of Wigmore Street have made these special suction tubes in assorted sizes for me.

straightforward attack. The interesting points about the case are the rash and the history of acidosis. The child had been taking sodium bicarbonate 7 grains three times a day for some months, and the sudden withdrawal of this in favour of the antifebrile mixture, coupled with the administration of aspirin, may have precipitated the second attack. The child is now, some weeks later, in perfect health.

London, W. HILARY LEDGERWOOD.

Reports of Societies.

THE OXFORD OPHTHALMOLOGICAL CONGRESS.

THE fourteenth annual meeting of the Oxford Ophthalmological Congress was held at Oxford on July 4th, 5th, 6th, and 7th. Members met at dinner on the evening of Wednesday, July 4th, in the Hall of Keble College. The proceedings took place in the Department of Human Anatomy of the University, which had been once more placed at the disposal of the Congress by Professor Arthur Thomson, the University professor of human anatomy. The majority of the members attending the Congress were again housed in Keble College, by the courtesy of its authorities—an advantage which is deeply appreciated and adds not a little to the success of the meeting each year. The attendance, especially from Britain Overseas and from the Continent, was greater than that of last year or any previous year, making the Congress of an even more international character than usual and a record in numbers.

At 10 o'clock on the morning of July 5th a short opening address was given by the Master, Mr. Sydney Stephenson, who received a hearty welcome.

A discussion on the relationship of dental sepsis to diseases of the eye was opened by Mr. W. R. Ackland of Bristol from the dental point of view, and by Mr. W. Lang from the ophthalmic aspect; it was well sustained by Dr. T. Harrison Butler (Leamington), Professor J. Van der Hoeve (Leyden), Dr. S. Lewis Ziegler (Philadelphia), Mr. P. H. Adams (Oxford), Dr. Sandford Gifford (Omaha), Mr. N. C. Ridley (Leicester), Miss M. Gilchrist (Glasgow), Mr. A. W. Ormond (London), and Dr. Richard Kerry (Montreal).

At the close of the discussion the annual general meeting was held, when the Secretary reported that twenty-two members had been elected, making a total membership of 350, and further that the report of the Honorary Treasurer, Sir Anderson Critchett, K.C.V.O., showed that the financial position was sufficiently good to enable the Congress to make a second donation of ten guineas to the illustration fund of the Ophthalmological Society of the United Kingdom.

In the afternoon papers were read by Lieut.-Colonel H. Herbert (Hove), Dr. C. F. Bentzen (Copenhagen), and Dr. H. Gjessing (Drammen), bearing upon the subject of glaucoma. Afterwards Mr. N. C. Ridley (Leicester) read a report of a case of orbital neoplasm. Colonel Herbert's paper was discussed by Professor Arthur Thomson.

On the morning of July 6th the chief contribution was the Doyne Memorial Lecture, delivered by Mr. H. Moss Traquair (Edinburgh), who chose as his subject the differential character of scotomata and their interpretation. The lecturer's work on the subject has achieved world-wide repute, and his admirably delivered address was warmly received. At its conclusion Mr. Traquair was presented with the Doyne Memorial Medal for 1923.

Two papers were taken before the lecture—the first by Dr. Sandford Gifford of Omaha, U.S.A., on intracisternal injections in the treatment of luetic optic atrophy, and the second by Dr. Lundsgaard (Copenhagen) on the Finsen treatment of conjunctival diseases. The latter was of especial interest in that the author, working in the birthplace of the Finsen light treatment, is an authority on the subject. After the lecture Professor Van der Hoeve (Leyden) read a paper on the rare condition known as tuberose sclerosis and its relationship to Recklinghausen's disease. A rather long morning session was concluded with a paper by Dr. T. Harrison Butler on the organization of ophthalmic clinics and hospitals.

In the afternoon Mr. Rayner Batten showed some beautiful drawings of conditions at the macula, pointed out the value of drawings of the fundus in clinical ophthalmology, and made some remarks upon the training of those who desire to undertake such work. Mr. John Batten followed, and as an artist gave an extremely interesting contribution on memory drawing by his own method of training. Professor Van der Hoeve (Leyden) described some original work on accommodation, and a report by Dr. T. Harrison Butler of his experience of muscle recession and muscle tucking concluded a strenuous day's work.

On Saturday, July 7th, the morning was devoted almost wholly to a discussion, introduced by Mr. R. J. Coulter of Newport, Mon., on the diagnosis of coal-miners' nystagmus and its relationship to the Workmen's Compensation Act. An excellent exchange of views took place, to which the following contributed: Dr. J. S. Haldane, F.R.S., Mr. G. H. Pooley (Sheffield), Dr. T. Lister Llewellyn—members of the Miners' Nystagmus Committee of the Medical Research Council—Dr. Elworthy (Ebbw Vale), Dr. T. Harrison Butler (Leamington Spa), Professor Van der Hoeve (Leyden), Mr. Percival Hay (Sheffield), Mr. R. H. Dickson (Newcastle, Staffs), Mr. Cridland (Wolverhampton), Dr. Stewart Barrie (Glasgow), Mr. A. T. Paterson (Durham), Mr. J. Jameson Evans (Birmingham), and Mr. Herbert Caiger (Sheffield).

A paper by Dr. T. Stewart Barrie on colour vision in amblyopic eyes associated with strabismus convergens followed, and was discussed by Dr. T. Harrison Butler. This concluded the proceedings of the Congress.

The official dinner was held in the Hall of Keble College on Thursday night, and among those present as guests were Mr. W. R. Ackland, Sir Archibald Garrod, K.C.M.G., and Professor Arthur Thomson. On Thursday afternoon a garden party was given at St. John's College, Lieut.-Colonel C. G. Douglas, C.M.G., Fellow of the College, acting as host. On Friday afternoon, after tea in Keble Gardens, a visit was made to the Pitt Rivers Museum, when the curator, Mr. Henry Balfour, kindly pointed out and described many of the objects of interest.

The Congress may well be said to have again this year realized the aim of its founder, the late Robert W. Doyne, by combining good work with the opportunity of members becoming more closely acquainted with one another.

THE "FAILED FORCEPS" CASE.

AT a meeting of the Edinburgh Obstetrical Society held on June 13th, with the President, Dr. LAMOND LACKIE, in the chair, Dr. D. SHANNON read a paper on the "failed forceps" case and its treatment.

Dr. Shannon said that by a failed forceps case was meant a case in which forceps had been applied and efforts made at extraction, without the desired result. Reviewing a series of cases treated by himself and his assistants, he found that out of 2,720 full-term deliveries, 70 cases, or 2.6 per cent., came under this category. A more detailed analysis showed the cause of the dystocia to be as follows:

Contracted pelvis, in varying degree, in 52 per cent.
Occipito-posterior positions of the vertex in 26 per cent.
Post-mature cases.
Brow presentations.
Face presentations.
Retraction ring.
In some of the cases no cause could be found.

The mortality, morbidity, and the great amount of invalidism following the treatment of these cases was, in Dr. Shannon's opinion, a reflection upon the art of obstetrics: 7 per cent. of the mothers died, and 50 per cent. developed temperatures in the puerperium; 60 per cent. of the children were stillborn. Two of his cases developed vesico-vaginal fistulae; two cases had rupture of the symphysis pubis; and in two rupture of the uterus took place. One became insane as a result of septic infection, and in nearly every case tears of the soft parts were present in varying degree.

The cause of this great mortality and morbidity, Dr. Shannon asserted, lay not with the cause of the dystocia so much as with the want of judgement shown by the practitioner who operated in the first instance. He deprecated the too early application of forceps, and also urged the practitioner not to apply instruments until a proper diagnosis had been made as to the size of the foetal head relative to the pelvic brim in cases of contracted pelvis. Nature should be given a chance to play her part, more especially in those cases in which the occiput lay posterior. He commented on the great necessity of preliminary examination three weeks before the onset of labour in all cases, and remarked that in very few of the cases under review had any examination been made at that time.

Some of these cases were admitted to hospital in a dying condition and died before any obstetrical treatment could be carried out. Others were infected and torn to a marked degree. In a few instances the vagina was practically torn to ribbons. Cases in such a complicated condition gave the consultant little chance of success.

In cases of contracted pelvis in which the child was dead, Dr. Shannon said that he always performed craniotomy. The same treatment was recommended in cases in which the child was obviously dying. In some cases he performed craniotomy on the living child rather than the classical Caesarean section, as under the circumstances the latter operation was too risky for the mother. Lately he had performed Caesarean section with a lower uterine segment incision in these cases, to test whether it was safer for the mother than the classical operation, but so far he had not reached a decision. Many cases in this group were, with excellent results, left to Nature after the relative size of foetal head to pelvic brim had been ascertained. In other cases a second forceps operation succeeded because the forces of labour, between the failure of the first operation and the admission of the patient to hospital, had caused a marked diminution of the diameters of the foetal head by moulding. Dr. Shannon did not recommend the operation of pubiotomy in these cases. In some instances in which the occiput lay posterior he gave Nature a chance, and was rewarded often by spontaneous deliveries or easy forceps operations. In other cases he turned the occiput anterior and delivered by forceps. In the occipito-posterior persistent case he advocated rotation of the occiput, and failing that delivery by forceps. The treatment of the other groups were also reviewed in a detailed manner. In conclusion, Dr. Shannon said that he wished to bring before the notice of the general practitioner the importance of expert advice and aid being called in early in these serious cases, and the danger of delay in sending them into hospital.

The paper was discussed by Drs. HAIG FERGUSON, KEPPIE PATERSON, OLIPHANT NICHOLSON, R. W. JOHNSTONE, JAMES YOUNG, ROSE, F. J. BROWNE, H. S. DAVIDSON, SOMERVILLE, and the PRESIDENT.

CLINICAL DISCUSSION AT CORK.

A MEETING of the University College, Cork, Scientific and Medical Society (Medical Section) was held on June 11th, with Professor C. Y. PEARSON in the chair, when Professor W. ASHLEY CUMMINS presented a case of Little's disease in a child aged 6, and pointed out the differential diagnosis of this form of cerebral palsy from other congenital paralyses of infancy and early childhood. Drs. M. CAGNEY, D. MORRISSEY, R. C. CUMMINS, and J. M. O'DONOVAN contributed to the discussion of the case, in which was pointed out the depressing contrast between the academic accuracy of diagnosis of such cases and the inadequate treatment in our present state of knowledge.

Professor C. Y. PEARSON presented a specimen of a malignant stricture of the pelvic colon.

The patient, a man aged 56, had suffered thirty years previously from dysentery, and had been treated during the past two years for abdominal pain and constipation. On coming under the speaker's care the patient was suffering from symptoms of subacute obstruction, and declined operation. The lower bowel was emptied by a small saline enema, slowly administered, and a hard mass was then palpable halfway between the umbilicus and the anterior superior spine. Subsequently the patient accepted operation, and on the abdomen being opened by a left linea semilunaris incision a malignant stricture was found in the pelvic colon. The ileum, which was adherent at two places, was found to be easily removable at one place, but owing to malignant infiltration it was found impossible to separate it from the pelvic colon at the other. Enterectomy was then performed; about a foot of the colon, including the growth, was removed, the continuity of the pelvic colon being restored by end-to-end anastomosis. The patient made a good recovery, and beyond some faecal discharge from the wound had no complications. An interesting condition was pointed out in the specimen—namely, that the inseparable adhesion of the ileum was actually sealing the peritoneal orifice of a perforation in the colon caused by ulceration at the site of the growth.

Dr. J. M. O'DONOVAN showed a case of cretinism, which had been treated with thyroid gland for twelve months, together with a photograph of the patient before treatment.

The patient was a male child, aged 2 years when first seen, and at that time he presented all the mental and physical stigmata of congenital cretinism. Thyroid gland was administered in doses of 2 grains per day, and in five weeks manifest improvement had taken place, especially in the mentality, eruption of teeth, and disappearance of the mucinoid infiltration of the body. The dose was then increased to 3 grains per day, and this dose was continued. The child was now normal for its age, mentally and physically, as was demonstrated to the meeting.

In the discussion which followed, Professor CUMMINS pointed out the importance of recognizing cases of subthyroidism not amounting to actual cretinism or myxoedema, especially in relation to "backward" children.

Dr. M. CAGNEY read a communication from Professor D. T. Barry (who was unavoidably absent) describing tests of the viscosity of the blood in a case of mitral stenosis under Dr. Cagney's care at the North Infirmary, Cork.

The patient presented marked mitral stenosis with pulmonary oedema, and the thesis of the communication was that in such cases the determining factor in the production of the oedema was as much an alteration of the physical properties of the blood (viscosity and osmotic pressure) as back pressure. Consequently, the routine examination of such cases should include an examination of those properties, and the proper line of treatment might be found in the intravenous administration of gum saline and not in cardiac stimulants.

A short discussion followed, in which Dr. J. M. O'DONOVAN suggested that the oedema in such cases, and in the heart-lung preparations in which Professor Barry had mentioned its frequent occurrence, might be due to a vaso-dilator toxin, as in the wound-shock experiments of Cannon and Bayliss, in which case the injection of gum-saline solutions might be expected to give relief. Dr. M. CAGNEY emphasized the need for team work in such cases.

THE DUCTLESS GLANDS.

A MEETING of the London Association of the Medical Women's Federation was held on June 12th, with Dr. LOUISA MARTINDALE, President, in the chair, when Professor WINIFRED CULLIS spoke on the physiology of the ductless glands. She emphasized the importance of co-operation between physiology and medicine in endocrine study, so that unnecessary repetition of experimental work might be avoided, and the great quantity of information that had accumulated might be accurately assessed. Dr. CICELY PEAKE read a short paper on the ductless glands from a therapeutic point of view, pointing out the need for standardization of preparations. Dr. ROSA FORD said that in her experience in general practice she was making less use of ductless gland preparations than in former years. She was impressed with the importance of securing normal intestinal function in avoiding and treating dysfunction of the ductless glands. Dr. MURRELL, Dr. KING, and Dr. SAVILL also took part in the discussion.

SINCE 1919 persons visiting French watering places pay a small tax, which in 1922 yielded a total of over eight million francs. *La Presse Thermale et Climatique* has published a classified list, from which it appears that the largest sum paid was collected in Nice (one million and a half francs); Vichy, with over 800,000 francs, comes next, and Biarritz, with nearly half a million francs, third. Inspection of the list shows that the greater part of the total amount is received at Riviera resorts and other seaside places. There is, in addition, a still smaller tax for the benefit of the Office National du Tourisme; it yielded in 1922 a million and a half francs.

Reviews.

MEDICINE IN THE WAR.

THE second volume[1] of the *Medical History of the War* dealing with *Diseases of the War*[2] contains three sections in particular which must be of prime importance to all students of the art of war as well as to military physicians and surgeons—namely, the sections on war neuroses, the medical aspects of aviation, and the medical problems of gas warfare.

It is not only the medical services which are concerned with neurasthenia and the war neuroses. Medical officers may encounter curious problems in psychology and in the frailty of the nervous "make-up" of man, but to the Adjutant-General these problems threaten incalculable and conceivably avoidable wastage of man-power. Captain W. Johnson's account of neurasthenia and the war neuroses in France is admirable up to a point. His observations suffer, however, from being confined almost entirely to stationary warfare, as seen in the Second and Fifth Armies in the Ypres salient and at the base in France. He describes in detail the arrangements for retaining casualties from psychical disorders in the army (that is, forward) areas. There is scarcely a hint that when military operations changed into a "war of movement" these arrangements were a hindrance without any compensating advantages. The "N.Y.D.N." centres were left miles behind, yet were still under the administration of an army which, in 1918, was rapidly advancing, so that valuable R.A.M.C. personnel (officers, nurses, and other ranks) credited to the strength of the army were hopelessly lost in back areas. The vaunted moral advantages of keeping the patients within earshot of the guns no longer existed; the centre became isolated in some remote spot, wasting personnel, and, almost more important, wasting transport. Even in a stationary army the moral advantage was highly doubtful. This chapter would have been more useful as a guide in future campaigns if the neuroses of war could have been described also from the viewpoint of the regimental M.O. or an A.D.M.S. of a Division like the Guards. Thus it comes about that there is a complete lack of evidence as to the real factors which minimize wastage from psychical factors. Frank criticism from the "front line" standpoint of the fighting value of men sent back as cured would have enriched this chapter. It is said (on p. 44) that the occurrence of relapses amongst patients treated in France was never a very serious problem. The practical lessons of the war are probably best expressed in the report of the War Office Committee appointed in 1920, whose findings are epitomized on page 65. The recommendations of this Committee will meet with the whole-hearted approval of combatant officers and of every medical officer who served with the fighting troops.

Lieut.-Colonel Henry MacCormac's chapter on skin diseases deserves special attention and the highest commendation. Skin diseases as a cause of wastage did not gain the notice they demanded until Colonel Soltau drew up in 1917 his memorandum on the classification of admissions to hospital in the Second Army. Then for the first time in the annals of military hygiene the real importance of skin diseases in the field was made clear. Dr. MacCormac expands this theme in language intelligible to the non-medical mind. The occurrence and spread of various skin affections (and diseases derived therefrom) are described under the headings of scabies, impetigo, pediculosis, and tropical dermatoses. The part played by seborrhoea in the causation of impetiginous eczema is rightly emphasized. The extent to which wastage of men could be avoided by adequate provision of baths and clean clothing ought to make the appointment of "O.C. Laundries" one of the principal staff billets in all future campaigns. German bathing and delousing stations were the one heritage of their occupation upon which we entered joyfully when we advanced in 1918.

Venereal diseases had a pitiable share in the production of invalidism from all fronts. Lieut.-Colonel Harrison writes temperately on this subject. Such hotly debated questions as prophylaxis and early disinfection he leaves as being too controversial for the evidence brought forward to assist materially in judging of their real merits. One paragraph in his article mentions the almost unaccountable difference between the British rates of venereal infection and those of the Dominion forces. He says: "The average British soldier proceeded to some village or small country town; the average soldier of the Dominion forces found his way to London. The former found abundant distraction in many home interests, the latter had perforce to seek more artificial amusements. The first operated against sexual incontinence, the latter favoured it." By comparison with this all other measures of prophylaxis sink into insignificance. The organization of special treatment centres is well described, but the results of treatment were not on the whole encouraging.

The medical aspects of aviation and examination of candidates (by Lieut.-Colonel Bowdler) bear witness to the scientific spirit which animates the youngest branch of our fighting forces. In the navy and army the interference of the physician and physiologist are not so gladly suffered. The Air Force allows scientific medicine almost a free hand in appraising the fighting qualifications of officers or flying ranks. This attitude was the outcome of the institution of a special medical board at the end of 1916 for the purpose of examining candidates and dealing with officers and pupils who had broken down. The results of the experiment were soon evident; at the end of a few months the percentage of pupils breaking down during training was reduced by 50 per cent. The methods used for testing candidates' fitness and their temperamental aptitude for flying are extremely interesting. In popular parlance, "guts" were the essential qualification, and the medical officers of the Air Force devised many subtle ways of discovering those candidates who had "guts" and those without any. These tests did not require elaborate scientific apparatus, as witness the so-called "breath-holding or respiratory test." Wing Commander Martin Flack considers that British experience proved that a history of special aptitude at various sports requiring eye and hand co-ordination as well as physical stamina is of equal value with experiments based on psychomotor responses to stimuli in assessing mental fitness for flying. The value of oxygen administration in aviation was left unsettled when the war ended. Martin Flack says: "The dislike of wearing something over the face when fighting for one's life is not prejudice but instinct, and constitutes one of the problems which the future has to solve." Even the men who climbed highest on Mount Everest are not agreed on the solution to the same problem.

Nearly half the volume is given up to the story of gas warfare. The employment of poison gases in warfare filled the civilized world with horror, yet it seems from these chapters that the rates of mortality and of permanent invalidism that gas can cause are far below the corresponding rates resulting from any other weapon of modern warfare. In other words, the man who becomes a "gas casualty" has a better prospect of escaping with his life and of recovering completely from his disablement than the man hit by shell, bomb, or bullet. This was not the conception of the man in the trenches nor yet of the public at home. Unpublished figures showed that in one army in 1918 during heavy gas attacks 60 per cent. of all gas casualties were fit to return to the line in a fortnight. The most fatal gas was chlorine, but the difficulties of directing it with certainty against the enemy limit its employment. A change of wind brings the chlorine cloud back into the faces of the troops launching the gas. Phosgene, too, is difficult of directional control, whilst both gases are efficiently guarded against by masks, and disperse rapidly. Mustard gas delivered in shells proved by far the most potent weapon of attack. It could be placed where it was

[1] The first volume of this part of the series of volumes edited by Sir W. G. Macpherson was reviewed in our issue of October 14th, 1922, p. 691. The two volumes which treat of surgery were reviewed in our issues of February 17th (p. 288) and February 24th (p. 332), 1923.

[2] *The Medical History of the War, based on Official Documents: Diseases of the War.* Vol. II. By Major-General Sir W. G. Macpherson, K.C.M.G., C.B., LL.D., Major-General Sir W. P. Herringham, K.C.M.G., C.B., Colonel T. R. Elliott, C.B.E., D.S.O., and Lieut.-Colonel A. Balfour, C.B., C.M.G., London: His Majesty's Stationery Office. 1923. (Demy 8vo, pp. viii+621; illustrated. 25s. net; post free, 26s.)

desired, it remained for hours and sometimes for days on the ground where the shells burst, and it attacked not the respiratory passages alone, but the whole surface of the body although covered with clothing.

Gas warfare thrust upon the medical services a new task. After the Ypres gas attack in 1915 protection became so urgent a need that chemists, physiologists, and physicians co-operated to devise protective masks or respirators for the troops. Thus the medical department became an essential and active branch of combatant defence. What bearing this may have in future wars upon the maintenance of Geneva Conventions and the semi-neutrality claimed for the Red Cross time will show.

In the great war scientific anti-gas defence established a superiority over attack. It is true that a mustard-gas bombardment could render localized areas untenable by defending troops, but the evacuated ground could not be occupied or advanced over by the attackers. The demoralizing effect of gas attacks was short-lasting, and the permanent invalidism was small in proportion to the number of casualties. There was no doubt, however, that at various times the number of men reporting themselves as gassed was disproportionate to the number who presented any signs of having really been exposed to the action of "poison gas."

The most important after-war problem is the sequelae of pulmonary irritant gases. Mustard gas is apt to leave extensive and progressive fibrosis, which may be mistaken for tuberculosis. The ultimate disability which may result in such cases cannot be foreseen. This renders final assessment of pensions uncommonly difficult, and needs to be borne constantly in mind by the Ministry of Pensions. Mr. Maxwell's artistic paintings of the effects of gassing are well reproduced in colour, and add greatly to the value of these chapters.

Although the medical problems in tanks occupy little space they are of grave importance, especially when we read that "one of the most serious disabilities encountered amongst tank crews was dependent on the design and mode of employment of the tank itself, and was in no way determined by enemy action. Whole crews developed symptoms of carbon monoxide poisoning from the exhaust fumes, even to the extent of becoming unconscious or occasionally demented." The section on poisoning in mines and mine rescue work deals in the main with the effects of carbon monoxide poisoning, and will be familiar to those medical readers who are acquainted with colliery work.

SABOURAUD'S LECTURES ON DERMATOLOGY.

WHY do not more of the masters of dermatology write books like SABOURAUD'S volume of clinical lectures,[3] which is far more stimulating and useful than the conventional "Textbook of diseases of the skin for practitioners and students," examples of which are multiplied by well meaning compilers? It is no exaggeration to say that anything that Sabouraud writes is worth reading. He is endowed with a clear and logical mind, by no means destitute of the tinge of scientific imagination which is very stimulating to the reader, even although he may not entirely agree with all the opinions expressed.

The lectures are arranged in three groups—diseases of the scalp, general dermatology, and venereology—and one useful feature is that the subjects dealt with are almost without exception common conditions such as are often encountered in practice, and yet on almost all of them Sabouraud has something new to say, or at least is able to exhibit them in a new light. The lectures, of which there are in all no fewer than thirty-eight, are of very varied length—some of them hardly more than a note of a few hundred words, others are considerable essays. Among the matters dealt with are alopecia of various kinds, with observations on the care of the scalp, not omitting reference to the effect of soaps, dyes, and alkalis commonly used for cosmetic purposes. This is not the first time that the author has written on these subjects, and to a certain extent views previously expressed are repeated. For example, in the first lecture he returns to the discussion of the relations betwen the sexual system and the growth of hair, and notes in particular that eunuchs preserve the covering of the scalp. After all, it has long been known that there was some connexion between hair and sex, and Sabouraud has now supplied another proof. But even Sabouraud is not much nearer the solution of the old problem as to why men go bald and women do not. He has, however, new ideas to impart as to the proper treatment of alopecia seborrhoeica; he recommends carbon disulphide as the best remedy, although unpleasant. If the patient is unwilling to put up with the inconvenience and discomforts of this substance, one of the less potent varieties of sulphur must be used.

In the section of the book in which the author deals with general dermatological subjects he tells the general practitioner how to diagnose scabies—a piece of instruction he considers to be not unnecessary—and how to treat psoriasis both by internal and external methods. He gives hints on the employment of vaccine treatment for furunculosis, and insists on the importance, in many cases of eczema, of limiting the patient's consumption of bread, an article of diet commonly supposed to be harmless, but which, in excess, is by no means innocuous. There is also a chapter on the theory of the causation of psoriasis, the problem which is perhaps the most insistent and the most baffling among those now engaging the attention of dermatologists. It cannot be said that Sabouraud has yet supplied the solution. In these pages he is chiefly concerned with demolishing the idea, rather prevalent in France, that psoriasis is a variety of tuberculosis, and he does this effectively enough. In discussing the capricious way in which the disease reacts to different internal remedies possessing, so far as can be seen, no common chemical basis whatever, but apparently acting (when they do act) by administering some "shock" to an erring metabolism, he puts forward the suggestion that when we have solved the problem of what this "shock" means we shall solve the problem of the nature of the disease.

Sabouraud is strongly in favour of venereal prophylaxis, and considers it a disgrace to France, the country where Metchnikoff and Roux first demonstrated the efficacy of calomel ointment, that vigorous measures have not been instituted, especially in the army. To the clinician the most interesting portion of his remarks on syphilis is his thesis that inherited syphilis is responsible for a far greater variety of disastrous sequelae than is usually acknowledged. He is of opinion that many individuals afflicted with ichthyosis, eczema, alopecia areata, and prurigo are really victims of congenital syphilis, although these conditions are not direct manifestations of the activity of the syphilitic virus. He revives the term "parasyphilitics" for these sufferers. Here he is on debatable ground, but his arguments are certainly worthy of attention.

Not only dermatologists but all practitioners should read this book; they cannot help learning something from it, but it will make them think more.

THE BRITISH CLIMATE.

THERE are three subjects of considerable importance in practice which are sadly neglected in the present medical curriculum—diseases of children, dietetics, and climatology. Of the first two it is possible to acquire a knowledge from the numerous textbooks which are available, but of the last, how is a student or a qualified man, without reverting to original papers, spending harassed hours over meteorological reports, or gaining information from continual personal observation and intercourse with others, to be expected to know anything at all? It is a subject on which he is taught nothing. It is left to him to pick up what he can about it. And unless the subject presents a particular interest for him, he is unlikely to learn very much. It was probably to redress this state of affairs that Dr. HAWKINS embarked upon his *Medical Climatology of England and Wales*.[4] He wanted to produce a manual which would gather into a small compass material scattered widely throughout the literature.

[3] *Entretiens Dermatologiques à l'École Lailler (Hôpital Saint-Louis).* By Dr. R. Sabouraud. New Series: first volume. Paris: Masson et Cie. 1922. (Roy. 8vo, pp. 333. Fr. 18 net.)

[4] *Medical Climatology of England and Wales.* By Edgar Hawkins, M.A.Oxon., M.D.Edin., D.P.H. London: H. K. Lewis and Co., Ltd. 1923. (Demy 8vo, pp. xiv + 302; 144 charts. 25s. net.)

To do this he has spared no pains. He has gone to the four winds of heaven in search of knowledge. His choice has ranged from the imposing blue books of the Meteorological Office to the common Bradshaw of the railway bookstalls. And by dint of perseverance extended over many years he has succeeded in compiling a veritable encyclopaedia—and an encyclopaedia arranged so well as to enable any item to be found at a moment's notice. Commencing with a general introduction on geology, climatology, and the physiological effects of meteorological factors, he passes on to a description of the climate of the British Isles as a whole, followed by a more detailed account of each of the seven districts into which he divides England and Wales. In these chapters, which are meant for reference rather than for continuous reading, besides affording information as to geology, temperature, sunshine, cloud, rainfall, relative humidity, snow, hail, fog, gale, thunderstorm, and prevalent winds, he includes a description of the various towns, health resorts, and spas, with useful data as to their social and recreational amenities. In conclusion he discusses the therapeutics of the English climate, and indicates the localities which are likely to prove most beneficial to sufferers from particular diseases. Two appendices are provided, the one a seasonal therapeutic guide to the health resorts, the other a classified list of waters at the various spas. An index of unusual clarity completes the volume. Perhaps the most valuable feature of the book is the attractive collection of coloured charts, which are intended to convey at a glance information concerning the various climatic factors in the area under consideration. In this their success is such as adequately to recompense the author for the relatively enormous labour he must have expended in their compilation.

As for criticism, there is little to be said, but we should like to make one or two suggestions. In the next edition, which will probably be called for rapidly, we would welcome the inclusion of a few maps. It is impossible to read the book intelligently without the aid of an atlas, and we feel it would be an advantage if, perhaps, two or three general and a dozen or so district maps could be supplied, just to refresh one's memory of the geography of the places under discussion. The section dealing with the effects of climate on the human organism might very well be enlarged. At present it covers only two pages and gives but a summary of the subject. Would it not be wise to include the recent work of Leonard Hill on the effects of temperature, winds, and humidity; that of Rollier, and of Miss Chick and her co-workers, on the effect of sunshine; to dilate upon the results of exposure to heat and cold of varying degrees—in fact to dwell more fully on the changes wrought by the physical conditions of the atmosphere? There is no book of which we know that treats of these subjects comprehensively, and it is in a volume of this nature rather than in one of general hygiene that the reactions of the climate upon the body should be described.

But enough! The present edition is excellent. And it has fulfilled its function of affording data which cannot be obtained elsewhere in a single volume. It would be understating the case to say that the book carries our recommendation. It does more. It leads us to assert that it is a book of such value that it should find a place on the desk of every practitioner — consulting and general alike. Only when used daily as a handbook of reference will it be appreciated at its full value, and only when it is appreciated at its full value will the author be repaid for the extraordinary diligence and care which he has bestowed upon it.

ENCYCLOPAEDIA MEDICA.

THE ninth volume of the second edition of the *Encyclopaedia Medica*[5] has a melancholy interest, for it brings again to our minds the premature death of Dr. J. W. Ballantyne, who so successfully brought out the first eight volumes in the face of many difficulties, and appears to have done some of the labour entailed by this volume, at any rate he revised his articles on "Maternal Impressions" and "Midwives." In his place the publishers have obtained the services of Dr. ALEXANDER GOODALL for the completion of this and the remaining volumes which it is hoped will all be brought out before the end of next year. This is, perhaps, rather optimistic, as the present volume, dealing with articles in alphabetical order from "Mammillaplasty" to "Obesity," still leaves a considerable field to be covered.

The volume contains new articles on military surgery by Sir D'Arcy Power, neurasthenia by Dr. Ivy McKenzie, and mycetoma by Major W. S. Patton; the articles on diseases of the muscles, nursing, and obesity have been rewritten by Mr. Tubby, Miss White, and Dr. D. Murray Lyon respectively. The account of the anatomy, physiology, vascular disturbances, inflammations, tumours, and some other conditions of the meninges has been revised by Dr. George Riddock, and the late Sir William Osler's account of cerebro-spinal fever by Dr. Claude B. Ker, who points out that a meningeal reaction due to serum sickness may, unless this possibility is borne in mind, be regarded as a relapse of the disease, but that in such a case the cerebro-spinal fluid will be found to contain a normal amount of glucose, whereas this is much diminished or entirely absent in the original attack and a relapse. There are nine articles on the nose and its diseases, Mr. Logan Turner's description of the inflammatory affections of the accessory sinuses being illustrated by some fine plates. In his article on nephritis Sir Nestor Tirard adopts with modifications Dr. John Gaskell's classification of the forms of nephritis, and refers to war nephritis and the tests for renal function. Dr. J. S. Browne's article on natality, or birth rate in its relation to population, is concise, suitably supported by statistics showing the widespread decline of the birth rate as a result of a search for "voluptuous sterility," and quite definite as to the need for a substantial remission of the income tax based on the number of children. Among the numerous short unsigned articles there is a judicious account of masturbation.

Altogether this instalment worthily maintains the standard set up by its predecessors, and we wish the new editor a continuation of his initial success.

[5] *Encyclopaedia Medica.* Second edition, vol. ix, "Mammillaplasty to Obesity." General Editor, Alexander Goodall, M.D., F.R.C.P.E. Edinburgh and London: W. Green and Son, Ltd. 1923. (Roy. 8vo, pp. x+672; 15 figures, 9 plates. 30s.)

THE "NAUHEIM" TREATMENT AT HOME.

THE sixth edition of Dr. LESLIE THORNE THORNE'S book on *The "Nauheim" Treatment of Diseases of the Heart and Vessels in England*[6] contains some new matter dealing with the treatment of arterio-sclerosis, alternation of the heart, and auricular fibrillation. The balneological treatment of heart disease has been received with a certain degree of scepticism in this country, and no doubt much of the discredit which attaches itself to it has been due to the over-zealous claims put forward and to the commercial advertising which has been adopted to impress the doctor and the layman and to attract him to the Continental spas. The author of the volume before us endeavours to demonstrate that the results claimed for the method are not dependent on residence in a foreign country, nor due to the mode of life adopted at the health resort, but can be equally well secured in any private house which has a bath and a supply of hot water. The general principles underlying the action of the baths and the method of administration are dealt with in a simple and explicit manner in the opening chapter. Great stress is laid on the necessity for selecting a bath suitable for the condition to be treated, as the author considers that failure to obtain a satisfactory result is in many instances due to giving an effervescing bath when a still bath is indicated.

All classes of heart and blood vessel disease would appear to be benefited by this line of treatment. Many cases are described and charts are given of the cardiac dullness and also polygraph tracings both before and after treatment. The cases of cardiac dilatation seem to have reacted in a most remarkable way, and the cardiac dullness as illustrated by the figures in the text has been reduced from an area which in some cases extended from well to the right of the sternum to the nipple line, to an area almost less than the

[6] *The "Nauheim" Treatment of Diseases of the Heart and Vessels in England.* By Leslie Thorne Thorne, M.D. Sixth edition. London: Baillière, Tindall, and Cox. 1923. (Post 8vo, pp. vi+232; 135 figures. 7s. 6d. net.)

cardiac dullness one usually obtains in health. The figures are from the result of percussion, as the author finds this to be as accurate as the x rays. Polygrams are used to supply corroborative evidence of the improvement, and while we do not always follow the writer in his interpretations of the jugular curves, it is possible to appreciate differences of rhythm, rate, and volume. Separate chapters deal with arterio-sclerosis, angina pectoris, valvular disease, auricular fibrillation and alternation, irritable heart, etc., while the closing chapter treats of resistance exercises as an adjunct to the balneological method of treatment. The exercises are given in such a way as to "cause dilatation of the muscular capillaries, thus reducing arterial tension, and thereby relieving the heart; a fact that is demonstrated by the pulse of increased volume, lowered tension, and lessened or altered rapidity."

The author is an enthusiastic advocate of the Nauheim method, and believes that it will give more relief to a patient suffering from auricular fibrillation than any other treatment. We note an error in the Contents; Chapter III should be page 80, not 96 as printed. There is no index.

MEMORIES OF SIXTY YEARS.

THAT a man who became a university graduate in 1859 has published in this year 1923 a volume of vigorous and interesting papers and addresses[7] is a fact to encourage other octogenarians not to let their faculties rust. Dr. W. W. KEEN, who is in London now to attend the meeting of the International Surgical Society, took part in what he calls the "horrible surgery" of the American Civil War, and has lived to be able to contrast it with that of the world war of 1914-18. He himself was a pioneer of antiseptic surgery in America, and the longest article in the book is appropriately entitled "Before and After Lister." In other papers he denounces antivivisection, and advocates abstention from alcohol. But the book is not confined to professional subjects. In an address delivered in 1913 in connexion with the hundredth anniversary of peace between Great Britain and America, Dr. Keen tells how, a few days before he spoke, he had been one of the signatories to an address beautifully engrossed on vellum, to be presented to the German Emperor, congratulating him on the fact that on June 15th of that year he would complete a twenty-five years' "reign of unbroken peace." Alas! in the following year the Emperor plunged into the great war, and Dr. Keen italicizes his conclusion that the world's hope lies in the amity, co-operation and solidarity of all the English-speaking peoples.

Medical ceremonials seem to have an attraction for Dr. Keen, and he gives pleasantly readable accounts of some graduation and other celebrations in which he has taken part—at Edinburgh, St. Andrews, and Upsala. He also tells the story of the early years of Brown University, of which he is a graduate. Though the author is now eighty-six years old, his outlook is rather that of a young man, and he concludes his book with a "message of hope" to the sufferers from malignant disease, if only they will seek advice and treatment early. Some of his cases were enjoying life fifteen and twenty years after operation, and he holds that there is a great field for x rays and radium. Long may he himself continue to write reminiscently for the edification of the generation which is still in the fighting line of medical and surgical duty.

NOTES ON BOOKS.

A SMALL book on acute infectious diseases in childhood, by Professor KLEINSCHMIDT,[8] Director of the University Children's Clinic at Hamburg, forms part of a series edited by Professor J. SCHWALBE of Berlin on diagnostic and therapeutic errors and their prevention. The diseases discussed in the present volume are the commoner infectious diseases of childhood, which are classified in four groups, according as the respiratory system, as in whooping-cough, influenza, and diphtheria; the digestive apparatus, as in enteric, dysentery, and mumps; or the nervous system, as in tetanus, cerebro-spinal fever, and acute poliomyelitis, is mainly affected. The acute exanthemata are placed in a group by themselves. In the introduction he points out that children are very liable to develop gastro-intestinal symptoms at the onset of an acute infection, so that the occurrence of anorexia, vomiting, and diarrhoea should lead to a careful inspection of the whole body, especially of the throat, and examination of the urine. Among the numerous diagnostic errors in the various infectious diseases mentioned are the possibility of overlooking pertussis in adults and typhoid fever in infants, and the failure to recognize the influenzal nature of gastro-intestinal symptoms, especially in children. Errors in treatment to which special attention is directed are delay in injection of antitoxin in suspected diphtheria or inadequate dosage, administration of a low diet in typhoid fever through fear of causing perforation of the intestine and in scarlatina to prevent nephritis, and the neglect to isolate cases of acute poliomyelitis. In addition to an account of the errors to be avoided, an outline is given of the proper treatment to be followed in each disease.

The forty-second volume of the *Proceedings of the Pathological Society of Philadelphia*[9] contains the record of the work done during 1921. Among the numerous specimens shown were several illustrating comparative pathology. The papers deal briefly with subjects of modern interest, such as a chemotherapeutic consideration of some of the newer organic mercurials and a comparative study of encapsulated bacilli isolated from cases of granuloma inguinale. There is an abstract of Professor Eugene L. Opie's Gross lecture on latent tuberculous infection and its relation to phthisis, in which he states that the lungs of adults with few exceptions show evidence of tuberculosis usually acquired in childhood; that latent apical tuberculosis occurs in approximately one-fifth of all individuals dying from diseases other than tuberculosis; and that pulmonary tuberculosis in most instances is not the result of infection in childhood. Tuberculosis in adult aborigines of countries into which tuberculosis has been introduced by more civilized races is not of the type familiar to us; in Chile a third of the cases among the Indians were acute, with massive caseous pneumonia involving whole lobes with little tendency to fibrosis.

[7] *Selected Papers and Addresses.* By William Williams Keen, M.D., LL.D., Emeritus Professor of Surgery, Jefferson Medical College. Philadelphia: George W. Jacobs and Co. 1923. (Cr. 8vo, pp. 340.)

[8] Diagnostische und therapeutische Irrtümer und deren Verhütung. Kinderheilkunde. Herausgegeben von Professor Dr. J. Schwalbe. Fünftes Heft: *Akute Infektionskrankheiten im Kindesalter.* Von Professor Dr. H. Kleinschmidt. Leipzig: Georg Thieme. 1922. (Sup. roy. 8vo. pp. 149; 3 figures, 11 charts.)

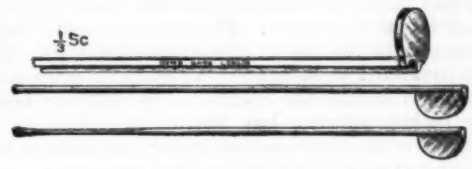
[9] *Proceedings of the Pathological Society of Philadelphia.* New Series, vol. xxiv; Old Series, vol. xlii; for year 1921. Edited by F. B. Lynch, jr., M.D. Philadelphia: W. J. Dornan. 1922. (Med. 8vo, pp. 93.)

MEDICAL AND SURGICAL APPLIANCES.

Staff for Perineal Section.

MR. G. H. EDINGTON (Surgeon, Western Infirmary, Glasgow) writes: In some cases of stricture calling for external urethrotomy the surgeon is faced by great difficulty, amounting sometimes to impossibility, in passing Syme's staff. I find that with patience it is possible ultimately to pass the smaller sizes of Lister's straight bougie. Sometimes this is the prelude to the passage of larger sizes of straight instruments, to be in their turn followed by the ordinary curved conical bougies. In other cases, however, the stricture even after successive attempts fails to admit more than the small straight instruments, and the necessity for urethrotomy arises.

It is possible to perform perineal section on a small bougie; but the operation is not easy, and the absence of a grooved staff may lead to irregular division of the urethra. The operation is greatly facilitated by the use of the special staff here depicted. The small straight bougie having been introduced through the stricture is held in place by an assistant while the patient is put into the lithotomy position. The bougie acts as a guide for the staff, which is then introduced and run along it till stopped at the face of the stricture. Perineal section is then performed on the staff, and the stricture divided from before backwards till the staff passes home beyond it. The bougie and staff are then withdrawn, and a No. 10 or 12 G.E. catheter tied in for forty-eight hours. Subsequent passage of large curved bougies is carried out as usual.



The staff has an outside diameter corresponding with a No. 10 catheter, and a blunt extremity. The groove, which extends the whole length of its under surface, should be wide and deep enough to completely bury a No. 1 straight bougie, so that the groove may be appreciable to the finger on the perineum, and may also accommodate the point of the knife. In order to facilitate the introduction of the staff its handle is turned up at right angles to its long axis, and the upper half of the disc-handle of the bougie has been cut away. The instrument has been made to my directions, of stainless steel, by Messrs. Down Bros., St. Thomas's Street, London, S.E.]

CONFERENCE ON INFANT WELFARE.

A CONFERENCE on infant welfare, called by the National Association for the Prevention of Infant Mortality and the National Baby Week Council, and attended by over 400 delegates, was held at Caxton Hall, Westminster, on July 2nd, 3rd, and 4th. The representatives of the British Medical Association were Dr. E. R. Fothergill, Professor A. Louise McIlroy, and Dr. D. H. Paterson. Two sessions each day were devoted to debates on the medical, social, and governmental side of the subject, two lectures intended for a wider audience were delivered each evening by medical men, and a number of tours were arranged to schools of mothercraft, day nurseries, and hospitals.

The Minister of Health on Present Needs.

The conference was opened by the Minister of Health (Mr. Neville Chamberlain), who referred to the comparative newness of the subject in its national aspect; it really dated from the Act of 1918, which prescribed the duties of local authorities and resulted in an extraordinary growth of the work throughout the country. Infant mortality had fallen to about half the rate per thousand at which it stood a generation ago, and he regarded it as unthinkable that, even in the name of economy, the nation should retrace its steps. The Ministry was determined that the efficiency of this service should not be cut down. The number of infant welfare centres and of health visitors should be increased, because experience had shown that where health visiting was most complete, and where there was an infant welfare centre within fairly reasonable reach of every mother, the greatest reduction in infant mortality was forthcoming. Another matter of urgency was the further provision of maternity homes with the object of reducing maternal and infant mortality. The unwillingness of mothers to attend maternity hospitals for their confinement, partly on account of prejudice, and partly because they would not go long distances from their homes, pointed in the direction of a large number of small homes rather than a small number of large ones. The provision of a large number of small homes would mean increased capital outlay and maintenance costs, but he hoped that as the financial condition of the country improved it would be possible to face expenditure under this heading. There was need also for the better provision of trained midwives in rural districts; the difficulty here also was financial—that of paying higher salaries.

Causal Factors of Infant Mortality.

The first discussion, over which Dr. G. F. Still presided, was on the causal factors of early infantile mortality. Dr. J. S. Fairbairn, in opening, said that roughly half the infantile mortality occurred in the first week of life, and was due to a bad start and not to mismanagement and lack of care after birth. Apart from birth injuries, the conditions causing early infantile deaths were chiefly comprised under the headings of maternal disease, prematurity, and foetal deformity. Prematurity was a large factor, and was partly the result of maternal disease. The supervision of pregnant women from as early in pregnancy as possible would diminish the number of premature births and births of feeble infants, but better co-ordination of ante-natal clinics with hospitals and other institutions capable of providing expert investigation and treatment was essential. He advocated strongly that all ante-natal clinics should be linked up with the scientific service of some of the large hospitals. Without this it was not possible for much reduction to be made in the incidence of premature and weakly-born infants.

Dr. R. C. Jewesbury presented statistics which showed that the recent reduction in infant mortality was most marked in the age-group between six and twelve months, and next in that between three and six months. Taking these two groups together, the death rate in infants between the ages of three months and one year had fallen from 47 in 1910 to 29 in 1920.

Dr. Donald Paterson said that less than 30 per cent. of the total number of neo-natal deaths investigated were unpreventable; in the remainder almost the whole of the causal factors could be disposed of, provided mother, midwife, and medical practitioner were continually on the alert. If the importance of breast feeding, the care of the child after birth, and the efficient treatment of syphilitic parents or prospective parents received serious attention, he held strongly that the neo-natal death rate should be reduced by at least 30 per cent.

Professor A. L. McIlroy maintained that hitherto overmuch attention had been focused on the baby, by which she meant that there had been too much interference with the natural processes governing the animal creation. A great deal could be done by sending properly qualified doctors and nurses to country districts.

The Value of Maternity Homes.

Dr. W. Allen Daley (M.O.H. Blackburn) opened a discussion on the value of maternity homes in a maternity and child welfare scheme. He said that at a conservative estimate there were over 2,000 preventable deaths of mothers in childbirth every year, associated in the main with lack of skilled assistance when needed in pregnancy and at and after childbirth. There were relatively few such deaths in the metropolitan boroughs, and relatively many in the county boroughs of the north, where maternity hospital facilities were notoriously lacking. In view of the fact that so very large a proportion of expectant mothers in industrial areas consulted a midwife in the first instance, the efficiency of the midwifery service and the attitude of midwives towards the homes was all-important. Co-operation between midwives and ante-natal centres must be promoted by devices mutually beneficial.

Miss Wishart, matron of Queen Mary's Maternity Hospital, Hampstead, said that at the moment the practising midwife was not a little apprehensive of the gradual development of institutional treatment for her *clientèle*. Although the midwife welcomed the help of maternity homes in cases where complications were anticipated, or where the mothers could not have the care, feeding, and comfort necessary, she was, nevertheless, naturally anxious to retain those cases with which she could well deal. If maternity homes were indifferently equipped or staffed they would do harm instead of good, not only to the mother but to the baby. An outstanding advantage of the maternity home environment was the opportunity it gave for education.

Administration of Maternity and Child Welfare Centres.

Dr. W. G. Willoughby (M.O.H. Eastbourne), in opening a discussion on this subject, said that it was the business of a child welfare centre to arrange that everything pertaining to the welfare of children from conception to birth, and from birth onwards, should have proper attention. A limitation of scope at present was the frequent lack of very early visiting in the homes by the health visitors after births had occurred.

Dr. E. R. Fothergill maintained that the objective of maternity and child welfare centres should be educational and advisory, and therefore preventive. No medical treatment should be given at the centre. When the expectant or nursing mother or the child required medical treatment, the fact should be communicated to the mother, with the advice that the family doctor should be consulted. In the case of the child, if the family doctor preferred not to undertake treatment, it would be treated at the clinic provided by the local authority. Clinics should be quite distinct from centres. With regard to the medical officer at the clinic, while specialism had its charms it had also its limitations. If the general practitioner were excluded, the better-to-do, who did not require attention at the centres or clinics, would be deprived of competent general practitioners to attend them in their homes. Every source of information and experience in the life of the community should be placed at the disposal of the general practitioner, who was the bedrock of the medical service of the country.

The Washington Maternity Convention.

An interesting discussion took place on the Maternity Convention passed by the Washington Convention, 1919, which provides that a woman in industry shall for six weeks before and six weeks after confinement be set free from work, be paid benefits sufficient for the full and healthy maintenance of herself and child, and be entitled to the free attendance of a doctor or certified midwife. Miss Margaret Bondfield described this as the first international charter of motherhood; it had been ratified by eleven countries, and she regretted that Great Britain was not among the eleven. The proposals of the Convention, if linked up in some way with the provisions of the National Insurance Acts, would not be too costly even in these times. A resolution was carried recommending the Central Committee to take some definite action in connexion with the Washington Convention.

Other discussions of the Conference were on the question whether out-relief should be given in cash or kind, with special reference to dietaries for children under five, and whether it was advisable in urban areas to combine the functions of the health visitor with those of other officers of local authorities. In the course of the very full discussion on the latter subject, Dr. J. W. Robertson (M.O.H. Birmingham) said that the scheme suggested in the title of the discussion would mean that the health visitor was working under two or three seniors, and would involve a good deal of conflict. Housing in relation to infant welfare was the subject of another discussion, presided over by the Hon. Sir Arthur Stanley, who said that at a baby centre he had visited, in one of the worst slum areas in London, the babies looked well; the only explanation was that the education of mothers was counteracting the effect of an adverse environment.

THE SMALL-POX SITUATION.

IN view of the public attention attracted by the outbreak of small-pox at Gloucester, the Ministry of Health thinks it well to issue the following statement.

The particular outbreak at Gloucester was not dealt with as soon as it might have been because of the refusal of the local medical officer of health to admit the presence of small-pox on a large scale in the city. There were, however, admitted cases of small-pox as early as April, and he was advised of the danger by the Ministry of Health early in May, on cases of small-pox occurring at places as distant from Gloucester as Liverpool and Abertillery, the source of infection in which was traced to Gloucester. At the end of May, a medical officer of the Ministry of Health, present in Gloucester on a public inquiry, visited various suspected cases reported to him by medical practitioners, which he diagnosed as small-pox. The medical officer of health did not agree, and Dr. Cameron of the Metropolitan Asylums Board was then invited to the city and agreed with the diagnosis of the medical officer of the Ministry of Health. A subsequent house to house visitation by officers of the Ministry of Health established the existence of epidemic conditions beyond dispute. The local authority dealt with the situation by entrusting charge of it to Dr. Davison, senior assistant medical officer of health, Birmingham; a special hospital was set up, special vaccination stations were established, and all contacts were traced as far as possible in view of the time which had been allowed to elapse. While fresh cases are still occurring, the situation is fairly in hand, though there is urgent need of vaccination of the population.

The particulars given as to the outbreak at Gloucester indicate the dangers of incorrect diagnosis. It is the duty of the general practitioner to notify small-pox to the medical officer of health, and if he is in doubt as to diagnosis he consults that officer. If in his turn the latter has any doubt he applies to the Ministry of Health, and the medical staff of the Ministry at once assists him by advice on the spot as to diagnosis and as to the action which should be taken to stamp out infection locally and prevent its spreading. In view of the number of calls now being made on the Ministry and the limited staff available, arrangements have been made by which medical officers of health especially expert in small-pox are ready to give immediate help as required in each of twelve districts into which the country has been divided for this purpose.

The following table shows the number of cases of small-pox reported during each of the four weeks ended on June 9th to June 30th in the various sanitary districts of the country. (These figures are subject to revision.)

District.	Week ended—			
	June 9th.	June 16th.	June 23rd.	June 30th.
Basford Rural District ...	3	—	—	—
Bentley-with-Arksey Urban District	—	5	2	1
Heanor U.D.	5	1	4	—
Doncaster Borough	—	2.	—	—
Middlesbrough County Borough	2	—	1	—
Nottingham C.B.	1	—	—	2
Alfreton U.D.	—	—	1	1
Stockton-on-Tees Borough ...	4	—	1	—
Clowne R.D.	1	—	1	—
Doncaster R.D.	2	4	10	1
Stapleford R.D.	—	5	—	—
Hereford City	—	—	1	—
Long Eaton U.D.	—	—	5	2
Cheltenham Borough	1	—	1	—
West Bromwich C.B.	—	—	—	1
Gloucester C.B.	27	51	78	90
Dursley R.D.	—	—	—	1
Gloucester R.D.	—	3	3	—
East Dean and United Parishes R.D.	1	—	4	3
Stroud R.D.	5	1	—	1
Cirencester U.D.	1	—	—	—
Stroud U.D.	1	—	2	—
Westbury-on-Severn U.D. ...	—	—	1	—
Cardiff C.B.	5	—	—	1
Lydney R.D.	1	—	—	—
Wheatenhurst R.D.	—	2	—	1
Risca U.D.	—	1	1	—
West Ham C.B.	—	2	—	—
Martley R.D.	—	—	1	—
Warsop U.D.	—	—	15	2
Belper U.D.	—	—	1	—
Birmingham C.B.	—	—	1	2
Kirkby-in-Ashfield U.D. ...	—	—	6	11
Millom U.D. (suspected) ...	—	—	—	2
Rhondda U.D.	—	—	—	7
Smethwick C.B.	—	—	—	1
Port of London	—	—	—	1
	60	77	140	131

It will be seen that the total number of notifications for these four weeks is 408—as compared with 151 in January, 154 in February, 214 in March, 141 in April, and 112 in May.

The statistics show that the incidence of small-pox at present is very widely spread over the country. The number of notifications in the first six months of the present year is largely in excess of the notifications for the whole of last year and is out of all comparison with the experience recorded since the last epidemic period, 1902-4. In view of the extent to which vaccination of infants has ceased (the percentage of vaccinations for the whole country in 1921 being 38.3 per cent. of births, as compared with 70.9 per cent. in 1907), and in view of the rarity of revaccination among the adult civil population, the Ministry of Health regard the situation with concern and hold the view that there is distinct risk of an outbreak of a serious character. The only practical remedy, now that the infection has been introduced, is increased recourse to vaccination, and the Ministry of Health would urge that this remedy should be made use of as widely as possible. Vaccination can be obtained free of cost by reference to the public vaccinator in the area, who uses lymph of approved quality supplied by the Government lymph establishment at Hendon. The reserve of tubes at Hendon is well over a million at present and can be expanded as required.

GLOUCESTER, GLOUCESTERSHIRE AND DERBYSHIRE.

The number of patients, suffering from small-pox, under treatment in the Gloucester isolation hospital on the morning of Saturday, July 7th, was 247; owing to discharges the number had declined to 236 on July 10th. Eleven fresh cases were notified in the city in the twenty-four hours ending on the morning of July 10th and were admitted to the hospital, and fifteen cases were discharged. The type of the epidemic has hitherto been, on the whole, mild, but it is reported that an infant died from the confluent form at Gloucester on July 8th. While many vaccinations are being performed daily in the city, the propaganda of the antivaccinationists continues and a large proportion of the residents is still unvaccinated. The Public Health Committe of the Gloucestershire County Council reported on July 9th that the epidemic of small-pox in the county had reached serious dimensions and that there was reason to anticipate that it would continue for some months. The epidemic continues to smoulder in Derbyshire. There are now twenty cases at Long Eaton and one has been notified at Sandiacre.

British Medical Journal.

SATURDAY, JULY 14TH, 1923.

RESEARCH AS A PROFESSION.

TOWARDS the end of last February Sir Alfred Yarrow gave £100,000 to the Royal Society to mark his sense of the value of research to the community. He gave it to be used as capital or income, as the Council of the Society might think fit, because he recognized "that conditions alter so materially from time to time that, in order to secure the greatest possible benefit from such a fund, it must be administered with unfettered discretion." To emphasize this point Sir Alfred Yarrow suggested that any rules made for the administration of the fund should be reconsidered by the Council every tenth year, so as to meet modern needs. While leaving the Council this valuable discretion, he expressed his hope that the money would be used to aid scientific workers by adequate payment, and by the supply of apparatus or other facilities, rather than upon erecting costly buildings on which large sums of money are sometimes spent without adequate endowment, so that "the investigators are embarrassed by financial anxieties." He expressed his expectation that care would be taken that "a gift from the fund shall in no case lessen any Government grant."

The Council of the Royal Society has given attention to the best way of using Sir Alfred Yarrow's gift, and has this week published the result of its deliberations. The official announcement states that on reviewing the situation it appeared to the Council "that there was a marked deficiency of positions in which a man who had already proved his capacity could continue to regard research as the main occupation of his life. Consequently at the Council meeting of the 5th inst. it was finally decided to use the larger part of the income in the direct endowment of research by men who have already proved that they possess ability of the highest type for independent research. To this end a number of professorships will be founded, of type similar to the Foulerton Professorships, which were founded by the Society in 1922 for research in medicine. The professors will be expected to devote their whole time to scientific research, except that they may give a limited course of instruction in the subjects of their research to advanced students. There is at present a tendency to regard scientific research as a secondary occupation for men whose primary occupation is the teaching of students. The intention of the Royal Society in founding these professorships is to recognize research as a definite profession."

We make no doubt that the Council of the Royal Society has rightly interpreted Sir Alfred Yarrow's wishes, and it will be observed that the two gifts which have recently been received by it—the Foulerton and Yarrow funds—have enabled it to establish a precedent new in this country at least, and not very common in any other. This new precedent is that research shall be the primary object of the incumbent of one of these professorships, and not, as has usually of necessity been the practice, an occupation secondary to the teaching of students. Sometimes, it is true, the occupant of a university chair has put research first and teaching second, but as it is his duty to teach, the university authorities may be disposed to grumble—not without some reason. No doubt the stimulus provided by a class of students is useful to some men, but, as Sir George Newman has more than once reminded us, the art of teaching requires special training and, perhaps even more, a special aptitude. A man may be an excellent teacher — many examples will come to mind — and not good at research work. The converse also is true. The two aptitudes do not always exist together, and there have been great scientific investigators who had no aptitude for teaching, except by example to a chosen few who assisted in the laboratory. The result of the great experiment the Royal Society is now able to conduct will not be known perhaps for a generation, but in its hands, and administered, as the donor desires, "by the best people from time to time available," there can be no doubt that the scheme must have a favourable influence on the progress of science in this country.

VACCINATION PROPAGANDA.

THE Bishop of Gloucester, who a few weeks ago, as we noted at the time, wrote a very incisive letter about the folly or worse of neglecting vaccination, has more recently, in the House of Bishops of the National Assembly of the Church of England, complained of the lack of propaganda in support of vaccination as compared with the activities of its opponents; he seemed to consider that the medical profession in general, and its Gloucester members in particular, had been remiss.

The question raised by Dr. Headlam is worth discussion, and we will admit that the antivaccinationist agitators are past masters in suppressing the truth and suggesting the false, but he is probably not fully aware of what the medical profession has done to make the truth known. Apart from the abundant and incontrovertible evidence of medical authorities writing for their own profession, there has been from time to time a very considerable issue of pamphlets, tracts, and leaflets for the education of the general public. The Jenner Society, of which the late Dr. Bond of Gloucester was the leading spirit, did yeoman service in this way, and also by publishing in the newspapers letters refuting the specious fallacies the antivaccinationists are always ready to put out. The Vaccination League, founded by the late Mrs. Garrett Anderson, did similar work with the help of its secretary, the late Dr. E. J. Edwardes. All these unselfish workers are dead, but in the present day Dr. Arthur Drury of Halifax, secretary of the Association of Public Vaccinators, continues to track out and refute antivaccinationist frivolities and falsities.

The discussion about vaccination, attack and defence, was specially active after the issue of the Report of the Royal Commission on Vaccination, when new legislation was in preparation. The policy then advocated by the British Medical Association and in this JOURNAL was that vaccination and revaccination should be put on the same legislative footing, for both are required for the prevention of small-pox. It was thought that if this could be achieved the exemption of strenuous objectors might be allowed in respect alike of primary vaccination and revaccination, provided that they were willing to go to the trouble of registering their objection with proper legal formalities. The view was that the notoriety of cheap martyrdom had

a natural attraction for minds of the "anti" type, and that vaccination might rather be hindered than promoted by severe compulsory methods. Parliament, however, unwisely as we believe, declined to make revaccination obligatory to the same degree as vaccination of infants, and subsequent legislation has so slackened the pressure which still remained in favour of infant vaccination that it is now practically optional, though parents even now are reminded of their duty when their babies are about to reach the age of six months. In such circumstances it may properly be asked whether there is any special obligation on members of our profession to adopt methods of propagandism in advocacy of vaccination. In Gloucester twenty-seven local doctors issued in the local press a brief but emphatic statement of their views, which were reproduced in our columns on June 23rd. Are they in addition to spend their time in controversy with any fanatic who chooses to deny that vaccination protects against small-pox? Any man who has a taste for polemics may usefully find exercise for his pen, and is to be commended if he makes himself acquainted beforehand with the stock sophistries of the letter-writing ring of the antivaccinationists, but it is not all of us who have leisure and inclination. Parliament put aside the advice of the profession, and responsibility for the present position lies at its door. The shower of questions that has been falling in the House of Commons on the head of the Minister of Health is proof that in that House to-day there are many members willing and even anxious to accept it.

The British Medical Association has constantly advocated a sound vaccination policy and lent its support to suitable propaganda. A standing subcommittee, appointed in 1912 to take any necessary action in defence of vaccination, had under consideration the possibility of resuscitating the work of the Jenner Society. The Committee was in abeyance during the war, and it was ultimately decided that, as the society depended largely for funds and membership upon lay support, the Association could not wholly identify itself with it, though it would continue to lend active support to its work. The Jenner Society is now incorporated with the Research Defence Society. Meanwhile the Imperial Vaccination League had lost both founder and secretary through death, and the Association gladly accepted such assets as it possessed, holding them in reserve for propaganda work. In accordance with a resolution of the Annual Representative Meeting at Cambridge in 1920 the Association made representations on the necessity for more thorough vaccination of the community, and from time to time information on the subject is supplied to members and others seeking advice. The Association's pamphlet, *Facts about Small-pox and Vaccination*, is at present under revision.

The Ministry of Health a year or two ago issued an admirable little tract[1] expounding the value and importance of vaccination. Like Government publications in general, that tract is not popularly known, but it contains much information of the kind the Bishop of Gloucester considers, and very rightly considers, ought to be placed at the disposal of the public. We heard not long ago that the Association of Public Vaccinators have had in preparation a brief exposition of the realities of the case. If they issue such a document, needless to say they will be accused of wholly mercenary motives; but that need not disturb them—all men of sense will recognize that they speak of what they know.

In the meantime small-pox itself, mild in type though it fortunately be, continues to teach, wherever it appears, the truth about vaccination. The Ministry of Health, in the memorandum it has issued this week (p. 71), states that it regards the situation with concern, and holds the view that there is a distinct risk of an outbreak of a serious character. Small-pox, even when mild, is a hard schoolmaster, but in an invaded locality whoever will take no other instructor has to submit to the risks involved, while those who choose to accept the protection offered them by successful vaccination and revaccination can live with easy minds in the midst of any variolous epidemic, whether mild or severe.

[1] Reports on Public Health and Medical Subjects. No. 8: Small-pox and Vaccination. H.M. Stationery Office. 1921. Price 3d. net.

MEDICAL SERIALS IN BRITISH LIBRARIES.

LACK of access to the literature of his subject frequently baulks the scientific worker. The difficulty is perhaps particularly great in London, partly because it has many libraries devoted to medicine and other branches of science. It is a wearisome business to go from one library to another on the chance of finding the particular periodical wanted. In the hope of obviating this waste of time Professor R. T. Leiper, F.R.S., some time ago suggested to the British Medical Association to produce an index or guide to the libraries in which the very numerous scientific periodicals can be found. He has now, with the collaboration of Mrs. H. M. Williams and Miss G. Z. L. Le Bas, M.Sc., prepared such an index. The primary aim of the compilers was that it should be of practical service to research workers, and in the arrangement of the list now issued they have been guided by their own experience and needs rather than by the standards followed by professional librarians. It is hoped, however, that the work they have done will initiate a movement among librarians to bring into effective working some practical scheme to provide London with the many serials it lacks and to eliminate the unnecessary multiplication of copies of little-used periodicals of which there is a surfeit. The time cannot be far distant when financial consideration and restriction of space must impose limitations upon the growth of most London libraries. Frank recognition of this should lead to the early adoption of a plan whereby two copies of every periodical publication can be provided in London; one filed for reference, the other available, under proper conditions, for loan. The list prepared by Dr. Leiper and his colleagues serves to indicate where much of the periodical literature of medicine and the allied sciences may be consulted, not only in London, but also in Cambridge, Oxford, Edinburgh, Glasgow, Liverpool, and Manchester. It is an approximately complete list of such periodicals (including the serials of learned societies available in Britain), and it is believed that few important titles prior to 1921 have been omitted. Moreover, many publications of an ephemeral character have been included on account of their historical interest. The list has been compiled from library catalogues supplied by librarians or other officials, and from lists made personally by the compilers. Where official catalogues have been published the information contained therein has been in many cases and as far as practicable brought up to date. No direct responsibility rests on the librarians or other officials for the correctness of the information, but great pains have been taken to ensure accuracy. It should be noted that the entries for the libraries of the Universities of Edinburgh, Glasgow, and Liverpool comprise only periodicals still current, and are based upon lists recently

issued by the universities. The British Museum, as is well known, has the right to a copy of every publication issued in Great Britain, and the list now prepared reveals the important fact, hitherto not generally realized, that the National Library in the British Museum contains also the most extensive and representative series of foreign medical and scientific periodicals in Britain. "This," Professor Leiper says, "must strengthen the many centripetal circumstances now tending to make Bloomsbury in coming years the post-graduate centre of the Empire," a centre in which the British Medical Association is shortly to take its place when it enters into occupation of its new house, of which a picture was published last week (p. 33). Professor Leiper expresses his thanks to the Science Committee of the British Medical Association "for the lively interest it has sustained in a project which has occupied his spare moments for the past four years as well as for its generous guarantee whereby the labour of love of the compilers is placed in the hands of their fellow workers at a price based upon the actual cost of publication." The book will be published next week at the price of 10s. 6d., and will be obtainable through any bookseller. It can also be purchased at the offices of the British Medical Association, 429, Strand, London, W.C.2, or will be supplied by the Financial Secretary by post (10s. 9d.). Copies will be available at Stand No. 64 in the Exhibition of the British Medical Association which will be held during the Annual Meeting at Portsmouth.

EDUCATION OF THE PUBLIC AS TO CANCER.

THE annual general meeting of the Royal Society of Medicine was held at the Society's house on Thursday, July 5th, at 5 p.m. The report of the Council was passed without discussion, and the officers and Council nominated for next session were duly elected. Subsequently a special general meeting of the Fellows was held, under the chairmanship of the President, Sir William Hale-White, for the purpose of receiving and considering a report by the Council on propaganda for the prevention of cancer. At an ordinary meeting of the Society held on March 13th, 1923, and reported in our issue of March 24th, resolutions were adopted affirming that the public should be given more information as to the early signs of cancer and prospects of cure by means of treatment, and inviting the British Red Cross Society to conduct a publicity campaign by means of lectures and pamphlets. The Council of the Royal Society of Medicine appointed a committee to consider the matter and to prepare information which might be supplied to the British Red Cross Society to disseminate widely for the education of the public. This committee held several meetings, including two with a committee nominated by the Ministry of Health to consider the question of cancer. Sir Arthur Stanley attended one of the meetings, and offered the help of the British Red Cross in distributing knowledge to the public if the Royal Society of Medicine would supply the information, to be used by lecturers already provided by the Red Cross Society or embodied in leaflets. The committee felt unable to advise that information should be provided for lecturers, because the Royal Society of Medicine would have no control over what the lecturers might say. But having read the leaflets already distributed by some medical officers of health, the committee drew up a leaflet entitled "What ought to be known about cancer," and advised that the Royal Society of Medicine should supply it to the British Red Cross Society. The Council approved this report and submitted it to the special meeting. At first there seemed to be some doubt in the minds of the Fellows present whether the Society was already committed to the issue of a leaflet by the resolutions of the ordinary meeting on March 13th. This doubt was cleared away by Dr. A. M. H. Gray, one of the honorary secretaries of the society, who stated that these resolutions were merely recommendations which could be accepted or rejected as the meeting wished. Sir Henry Morris expressed grave doubts as to the wisdom of joining with the Red Cross Society in a publicity campaign, though he was quite willing to consider the advisability of a pronouncement of its own by the Royal Society of Medicine. He felt also that some of the statements in the leaflet might produce anxiety in the minds of many people without any real advantage. Dr. W. S. A. Griffith objected to a statement about uterine haemorrhage after the menopause as too sweeping; and Sir StClair Thomson and others complained of omissions in the leaflet. One or two speakers expressed the opinion that propaganda on the subject would be better left to the medical officers of health. Owing to these and other criticisms a proposal to postpone the matter until the autumn session was eventually accepted without a dissentient. The Central Midwives Board has two excellent leaflets, one on cancer of the breast, the other on cancer of the womb, both drawn up by its chairman, Sir Francis Champneys. They are written in general terms, and in plain language convey information of first importance to all women. As is noted above, some medical officers of health have issued leaflets for local distribution. It is true that surgeons often find that the disease is beyond the reach of surgical help when the patient first applies for treatment and are naturally desirous that possible future sufferers should be instructed in the recognition and the early manifestation of the disease, but the Royal Society of Medicine is probably wise in giving this matter of a publicity campaign on cancer further consideration, for any leaflet issued under its authority should be very carefully worded so as not to appear to promise too much.

COMPARATIVE MEDICINE.

A SECTION of Comparative Medicine has been established by the Royal Society of Medicine, and was formally constituted at a meeting on July 6th, when Sir Clifford Allbutt was elected president. The section is open to duly qualified veterinary surgeons as well as to medical practitioners. Half the members of the council represent human medicine and half veterinary medicine. The vice-presidents are Major-General Sir Layton Blenkinsop, K.C.B., Colonel Commandant Royal Army Veterinary Corps, Lieut.-Colonel J. W. Brittlebank, C.M.G., R.A.V.C., Sir William Hale-White, President of the Royal Society of Medicine, Mr. Frederick Hobday, C.M.G., F.R.C.V.S., Major-General Sir William Leishman, K.C.M.G., F.R.C.P., F.R.S., Major-General Sir John Moore, K.C.M.G., F.R.C.V.S., Sir Leonard Rogers, M.D., F.R.S., and Mr. G. H. Wooldridge, F.R.C.V.S. The section will hold its first meeting at the beginning of next session, and thereafter will meet at 5.30 on the fourth Wednesday in each month. Mr. Hobday, who, it will be remembered, opened the discussion on animal pathology in relation to human diseases at the annual meeting of the British Medical Association last year, and who is this year a vice-president of the Section of Pathology and Bacteriology, has rendered important services in the formation of the section, and may without exaggeration be called its founder; if this be so then Sir Clifford Allbutt may be called its father, for it is to his persistent advocacy during many years and in several addresses to the British Medical Association that the recent impetus to the study of comparative pathology and medicine has been in the main due. Another evidence of the success of his labours is seen in the institution of the professorship of animal pathology in Cambridge, which will form part of the great school of comparative medicine and pathology that is growing up in Cambridge.

TRIAL OF DREYER'S VACCINES AND ANTIGENS IN LONDON.

THE Public Health Committee has framed a scheme, which was adopted by the London County Council on July 10th, for testing the clinical efficacy of the diaplyte vaccines and antigens produced by Professor Dreyer. His original paper, giving a preliminary account of his researches and of some clinical trials then in a very early stage, was published in the *British Journal of Experimental Pathology*, and an abbreviated account of his results was given in our columns a few weeks ago (June 23rd, pp. 1065 and 1059). The scheme is to set apart at the Hampstead Hospital (New End Infirmary) fifty beds—twenty for men, twenty for women, and ten for children. The patients will occupy a separate part of the infirmary and will be under the treatment of Captain S. R. Douglas, F.R.S., bacteriological director at the National Institute for Medical Research, Hampstead, formerly director of the inoculation department of St. Mary's Hospital. The proposal has received the sanction of the Minister of Health, and it is intended to enter into a formal agreement with the Hampstead guardians in the first place for six months. The Minister is prepared to approve additional expenditure by the Council at the rate of 50s. a week for the maintenance and care of each of the patients under this treatment. All patients will be selected through the Council's scheme for the treatment of tuberculosis, and in view of the experimental nature of the treatment, only those patients who are willing to undergo it will be accommodated. A small committee of medical experts will be appointed to supervise and to report upon the results of the treatment.

DIPHTHERIA RESEARCH AT GHENT.

THE Institute of Hygiene and Bacteriology of Ghent University, built in 1905, is a centre for instruction in the principles of hygiene and bacteriology, and provides a department for the examination of pathological specimens, the analysis of water, and the performance of serological tests. Much valuable research has been carried out in the laboratories of which Dr. M. Henseval is director, particularly with reference to vaccination against diphtheria by means of toxin-antitoxin mixture, and the value of the Schick test. In 1921 Henseval and Clevers[1] demonstrated that the inoculation of guinea-pigs with an appropriate mixture of diphtheria toxin and antitoxin conferred on these animals a high degree of immunity, manifested by the production of a large quantity of antitoxin, enabling them to resist many times the lethal dose of toxin and to survive a heavy inoculation of virulent diphtheria bacilli on the buccal mucous membrane. They showed also that the inoculation of human beings with a similar mixture of toxin and antitoxin determined a similar immunity, even in individuals positive to the Schick test and not possessing any appreciable quantity of antitoxin. They suggested that this method might be employed for the prevention of diphtheria, provided a carefully prepared product were employed. Working at this institute Dr. Vernieuwe studied the relation of the Schick reaction to cases of nasal diphtheria,[2] and observed that patients suffering from diphtherial ulcerative rhinitis generally gave a positive reaction to the Schick test; but vaccination with toxin-antitoxin mixture modified their receptivity and rendered them negative; he suggested that it might even be possible to prevent the diphtheria bacilli from living on the mucous membrane by suitable vaccination. To achieve this, however, it would be necessary to raise the circulating antitoxin to a high level. The development of a diphtherial lesion depends not only on the presence of the organism and the receptivity of the host, but also on the existence of damage to the mucous membrane or deeper tissues, and the fact that an operation wound in the pharynx or nasopharynx of a patient suffering from diphtherial rhinitis may create a new focus of infection should not be lost sight of. It has often been assumed that the method of vaccination by toxin-antitoxin mixture is a variation of the method proposed by Behring, who, indeed, declared that his vaccine consisted of a mixture with a slight excess of toxin, but did not give any indication of its method of preparation. Henseval and Clevers have found[3] that the methods of administration of the two vaccines are totally different, that Behring's vaccine is much more toxic, and that its injection does not give rise to such a high degree of immunity. They conclude that the two methods are based on entirely different principles, and are not satisfied that the immunizing value of Behring's vaccine has been sufficiently established. The same authors have investigated the minimum quantity of antitoxin determining a Schick-positive or Schick-negative reaction in guinea-pigs,[4] and found that a Schick-positive reaction did not appear whilst the blood contained more than one three-hundredth of a unit. When the blood of these animals contains more than a fiftieth to a hundredth of a unit of antitoxin they resist a heavy inoculation of diphtheria bacilli on the ocular mucous membrane. In another recent communication[5] the fact is confirmed that antidiphtherial vaccination of human beings produces an active immunity which enables the person to resist diphtheria infection for a long time—five years or perhaps longer. This observation, they suggest, might be utilized for young children presenting a Schick-positive reaction. The most appropriate vaccine is one under-neutralized, which does not rapidly cause the death of guinea-pigs in doses of 5 c.cm., although capable of provoking delayed reactions of a paralytic nature in 25 to 50 per cent. of the animals. This is preferable to vaccine completely or hyper-neutralized. Although these authors consider antidiphtherial vaccination to be a method sufficiently established to be recommended, they hesitate to recommend it for universal use.

[1] *Bull. de l'Acad. Roy. de Méd. de Belgique*, September, 1921.
[2] Ibid., October, 1922.
[3] *Comptes rendus des Séances de la Soc. de Biol.*, March, 1923.
[4] Ibid., March, 1923.
[5] *Bull. de l'Acad. Roy. de Méd. de Belgique*, March, 1923.

PSEUDARTHROSIS.

THE complicated arrangement of the tissues found in pseudarthrosis and the transitions met with from one form of tissue to another have been referred by some writers to a process of metaplasia—that is to say, the transitional forms have been held to indicate merely a genetic relationship between the various tissues. In a recent paper on the microscopic structure of pseudarthrosis[6] Mitterstiller, following Roux, seems disposed to adopt the view, which is largely borne out by the observations described in his paper, that the differentiation of the tissues found in false joints is due to the varying mechanical forces to which the joints are subjected in different parts of their structure. Thus, where lateral or gliding movements of one portion of tissue on another are predominant, a fissure is produced; where such movements are associated with pressure, cartilage is developed; in situations where movement is at its minimum bone is found, and fibrous tissue where the tissues are subjected to tension, as at the periphery of the bone-ends in angular movements. The connective tissue, cartilage, bone, and joint capsule are held to arise from a single tissue or blastema, and similar relations are considered to hold in the regeneration of a joint as in its first development. Mitterstiller's observations were made on four cases of pseudarthrosis—two in the tibia of five and eleven months' duration respectively, one in the ulna of four years' duration, and one in the humerus of eleven and a half years'

[6] *Archiv für klin. Chir.*, 1923, vol. 122, p. 939.

duration. He has thus been able to compare the changes as they present themselves at different periods after the infliction of the injury, and under the different mechanical conditions obtaining respectively in the upper and lower limbs. An interesting account is given of the mode of development of the level bony surfaces destined to bear direct pressure parallel to the axis of the shaft. The manner in which the bone is deposited and the definitive structure of the pressure surfaces are well described and illustrated. The influence of the several mechanical forces —pressure, friction, and tension—in producing the complicated structure of the transverse fibrous plate, with its cartilaginous deposits, fragments of osseous tissue, collections of calcareous débris, and variously directed fibrous strata, are also fully discussed. The formation of the synovial cavity has been variously explained by different authors as resulting from haemorrhage, or from softening of the tissues consequent on hyaline degeneration and obliteration of the vessels. Mitterstiller ascribes it to frictional movement between adjacent tissue strata, and gives evidence in support of this view. The paper is illustrated by a number of excellent microphotographs, and contains a detailed account of the literature of the subject.

INTERNATIONAL CONGRESS OF OPHTHALMOLOGY.

IT had been proposed to hold an international congress of ophthalmology in London in 1925, but it has been decided to postpone it. We are informed that the committee of British ophthalmologists appointed to organize the congress finds with regret that it is unable to do so in accordance with the conditions under which the British invitation was accepted by the Washington Ophthalmological Congress in 1922, when it was decided that the next congress should be strictly international and that German should be one of the official languages. The committee has since been informed that the Société Française d'Ophtalmologie, the Société d'Ophtalmologie de Paris, and the Société Belge d'Ophtalmologie have passed resolutions to the effect that they feel themselves unable to participate in a congress if Germans are invited. The committee is of opinion that to proceed with the congress in these circumstances would tend to perpetuate a schism in the ranks of ophthalmology, and militate permanently against the progress of the science which all desire to promote. The committee has, therefore, reluctantly decided to postpone the congress.

THE CENTENARY OF THE "LANCET."

THE dinner in celebration of the completion of the hundredth year of the *Lancet* will be held in London on Wednesday, November 28th, 1923. Sir Donald MacAlister, President of the General Medical Council, will take the chair, supported by the President of the Royal Society, the President of the Royal College of Physicians of London, the President of the Royal College of Surgeons of England, the Chief Medical Officer of the Ministry of Health, the President of the Royal Society of Medicine, and the President of the Medical Society of London. Dr. J. W. H. Laing and Mr. H. D. Gillies (7, Portland Place, London, W.) are acting as honorary secretaries to the Dinner Committee.

THE PRICE OF INSULIN.

THE Ministry of Health announces through the secretary of the Insulin Committee, Dr. G. F. McCleary, that the retail price of insulin has been reduced. Until a few weeks ago, the Ministry states, the American retail price, formerly higher, was 2d. per unit, or 2¼d. per unit in an alternative strength. The corresponding British retail price was 3d. per unit. The American retail price was then reduced to just over 1½d. per unit, and by a decision taken last week, and made effective as from July 12th, the British retail price has been reduced to approximately 2d. per unit. Hospitals have, in fact, had the advantage of this reduction already during the present week. They are allowed a trade discount of 15 per cent. on the retail price, and will thus now pay about 1¾d. per unit. The main reason for the difference of price in the United States is that manufacture there began, under the guidance of the workers in Toronto University, some months earlier than was possible here. But as laboratory processes are progressively converted into large-scale manufacture the price goes down, and the decline in this country, in spite of certain handicaps, has been greater proportionately than in the United States. The British Drug Houses, Ltd., inform us that the reduced price became effective on July 12th, and that supplies are sufficient to meet all demands.

PRESERVATIVES AND DYES IN FOOD.

THE Minister of Health has appointed a committee to inquire into the use of preservatives and colouring matters in food and to report (1) whether the use of such materials or any of them for the preservation and colouring of food is injurious to health, and, if so, in what quantities does their use become injurious; (2) whether it should be required that the presence of such materials and the quantities present in food offered or exposed for sale should be declared. The committee is constituted as follows: Sir H. G. Monro, K.C.B. (chairman), Professor W. E. Dixon, O.B.E., M.D., F.R.S., Sir A. D. Hall, K.C.B., LL.D., F.R.S., Dr. J. M. Hamill, O.B.E., M.D., D.Sc., Mr. O. Hehner, F.I.C., Professor F. G. Hopkins, F.R.C.P., F.R.S., Dr. G. R. Leighton, O.B.E., M.D., Dr. A. P. Luff, C.B.E., M.D., F.R.C.P., Dr. C. Porter, M.D., B.Sc., and Mr. G. Stubbs, C.B.E., F.I.C. The secretary of the committee is Mr. A. M. Legge, of the Ministry of Health, Whitehall, S.W., to whom all communications should be addressed.

Mr. Godfrey Locker-Lampson, Under Secretary for Home Affairs, Sir Arthur Stanley, Lieut.-Colonel Fremantle, Lord Dawson of Penn, Sir Thomas Horder, and Sir Edward Marshall-Hall, on behalf of the British Empire Cancer Campaign, met, at the House of Commons on July 10th, representatives of the Royal Society and the Medical Research Council. A discussion took place regarding the scientific side of the campaign, and it was decided to form an Advisory Committee to assist the carrying on of the campaign from a scientific standpoint, if the necessary agreement upon details could be reached.

Red Cross Societies have always esteemed it one of their duties to come to the assistance of the inhabitants of districts which have suffered from such disasters as earthquakes, floods, or great mine explosions. At the instance of Senator Ciraolo, president of the Italian Red Cross Society, and with the approval of the Society of Nations, the International Red Cross Committee has proposed to organize such work more thoroughly, and as a first step to prepare an atlas of catastrophes, according to a plan evolved by M. Raoul Montandon, president of the Geographical Society of Geneva. He has prepared a pamphlet on the subject, illustrated by sketch maps, and suggests that a chronological list of catastrophes should be drawn up giving precise details as to their remoter causes, the regions affected, and the loss of human life and material destruction involved. The assistance of scientific institutions is invited in the preparation of local reports, upon which the International Red Cross Society will be able to found the proposed atlas. Communications should be addressed to the Secretary of the International Red Cross Committee, Promenade du Pin, 1, Geneva.

NINETY-FIRST ANNUAL MEETING
of the
British Medical Association,
PORTSMOUTH, 1923.

OLD PORTSMOUTH AND PORTSEA.

(*Concluded from page 1101, vol. i.*)

At the end of Highbury Street the old chapel of St. Mary of Close stood from 1320 to the time of Elizabeth. Later another chapel of ease to St. Thomas's was built here and opened in 1839. The church, closed at the beginning of this century, has been razed, and the ground is now laid out as an "open space."

Before the fortifications were demolished leading from St. Mary's Road was a narrow way across an iron bridge over part of the old Mill Pond to Portsea. There is now a good road; the visitor should proceed to Portsea before returning to High Street. The old Mill Pond was filled in with the earth from the old walls, and the ground levelled, now forming the Men's Recreation Ground. Just before passing under the railway arch is the entrance to the old Gun Wharf. The old part of the wharf dates from 1662. Here were parked all manner of stores for military and naval use, many old relics were stored, and the Armoury was decorated with designs similar to those seen in the Tower of London. The army stores are now at Hilsea, the naval stores at Gosport, and the armoury at Camberley. Passing under the railway arch, on the right St. George's Square and Church can be seen. At No. 3 in the square is the house in which Sir Walter Besant was born on August 14th, 1836. He was educated in the town, and was a regular visitor to his natal town after he ceased to reside therein. He describes the church in his novel, *By Celia's Arbour*, under the name of "St. Faith's," thus: "Externally it was a great barn of red brick set in a courtyard surrounded by a red brick wall with a roof of red tiles." The church was built in 1753. On the east side of the square is Britain Street. In a house in this street Isambard Brunel was born on April 9th, 1806.

FIG. 4.—Landport Gate.

The way to the Dockyard is westwards along Common Hard, the landing place for civilian goods and not reserved for Admiralty stores. It was a wild spot till the shipwrights began to build houses for themselves near the yard in Queen Anne's reign. The governor of the dockyard at that time—Colonel John Gibson—objected to the building as he wanted a clear space all around for the better defence in case of attack. Prince George of Denmark supported the men's appeal, and in memory of his success the shipwrights called the first street Prince George Street, and by that name it has continued to be called.

The Hard is not a particularly beautiful place, and the railway to the Harbour Station for the Isle of Wight greatly interferes with the view of the harbour. Nor are the logs, the black mud, and the mudlarks things of beauty. The Hard, too, is a curious study for those interested in the drink question. Within 200 yards one could count fifteen public houses; there are plenty now, and at one time there were more. The only establishment of any note amongst them is "Keppel's Head," an old naval house.

Facing us at the end of the Hard are the main gates of the Royal Dockyard. A tablet in the wall by their side tells us they were finished in 1709. Before their erection the entrance to the yard was at Bonfire Corner, about a quarter of a mile further along the road. Still further on, at the end of Unicorn Road, is the other entrance to the yard. Unicorn Gate, together with Lion Gate, were once part of the old Portsea fortifications. These gateways were erected in 1778, the Lion Gate at the eastern end of Queen Street, the Unicorn Gate at the end of North Street. After the dismantling of the fortifications the Unicorn Gate was re-erected to make a new entrance to the yard. The Lion Gate was turned through a right angle and used quite near its old situation as the entrance to Anglesey Barracks. These barracks, together with some old convict quarters, have been cleared away and the ground absorbed by the present Naval Barracks. The stonework of the old Lion Gate has been preserved, and it is hoped that the near future will see the gate re-erected in some prominent position in the borough.

At the Bonfire Corner end of Queen Street is Cross Street; at the end of Cross Street is Orange Street, and not far from here St. John's Church, formerly known as St. John's Chapel; it was built on Portsmouth Common in 1787 in the Venetian style, and, like St. George's, is a large red brick building. Orange Street has associations with Whitefield. He as well as both Wesleys visited Portsmouth several times. In Orange Street as a result of Whitefield's visits "The Tabernacle" was opened in 1754. A little later in Daniel Street, parallel to Cross Street, the first Methodist church in Portsmouth was established.

Leaving the dockyard for a visit on another occasion, we will return to where we left old Portsmouth and find our way to High Street.

In 1860 a Royal Commission came to the conclusion that fortifications like those of Portsmouth were obsolete. A few years later the ramparts were demolished, the Mill Pond filled in, and the present Recreation Grounds formed. Of the old Portsmouth gateways the Landport or Town Gate alone occupies its original position. It now forms the entrance to the Men's Recreation Ground. The old Landport roadway has been diverted; the new road is in a line with High Street. The stonework of the gateway dates from 1760. It was at this gate that the lieutenant-governor delivered the keys of the garrison to Royal visitors. An interesting description of the old spot is contained in Besant novel, *By Celia's Arbour;* it is also the scene of an episode in Meredith's *Evan Harrington*.

FIG. 5.—The George Hotel, High Street.

At the top of High Street on the left are situated the Cambridge Barracks, first erected as stores during the Napoleonic wars. An enlargement of the barracks in 1856 necessitated the demolition of the old Portsmouth Theatre. This old building had many histrionic associations. Stephen Kemble was at one time its manager. Edmund Kean and Charles Kean were frequent visitors, and Dickens, in *Nicholas Nickleby*, makes it the home of Mr. Vincent Crummles's remarkable successes.

During the management of Stephen Kemble on one of the nights when there was no performance, a sailor off to India the next day asked to have the house opened that he might see a play before he sailed. An agreement was made and a tragedy was to be represented at a cost of five guineas, and no one to be admitted to the house except the sailor. *Richard the Third* was chosen for the presentation, and Kemble himself played Richard. The sailor thoroughly enjoyed the play, was perfectly satisfied, and cordially thanked the manager.

The house next the barracks, No. 10, High Street, was built on a demolished wing of No. 11, now called Buckingham House. The site of the old theatre was in the rear of these premises. The first house, where 10 and 11 now stand, was called "The Grehonde," and was occupied by the builder of Southsea Castle. When it was demolished the next erected house was called the "Spotted Dog." In 1627 William Brooke had a licence for it as a "Comon Inne." Later it was occupied by John Mason.

Mason had been Governor of Newfoundland and in 1624 returned to England, but went abroad again in 1631, when he founded New Hampshire in America. On his return to England from this trip he was appointed Captain of Southsea Castle. When the Garrison Church was restored in 1874 the people of New Hampshire presented the gas standards, and a brass to Mason's memory was placed in the chancel. In 1628 the Duke of Buckingham was preparing his third expedition for the relief of Rochelle, and was a guest at Mason's house. He was unpopular in the country and with his own men. A certain Lieutenant John Felton, infected with the general dissatisfaction of the period and obsessed by a personal grievance at being refused promotion, bought a dagger on Tower Hill, and rode to Portsmouth, tethering his horse outside the town walls. The original entrance to Mason's house was under the round arch; a dark passage led to the central hall. In the passage Felton secreted himself on the morning of August 23rd, 1628. Buckingham breakfasted in a room off the dark passage, where he at the same time received a deputation from Rochelle. Breakfast finished, he was about to proceed to his carriage, but stopped for a moment to speak to Colonel Sir Thomas Fryer near the door of the breakfast room, when he was stabbed in the left breast by Felton. In a document found on the assassin he described himself "the heavensent avenger of his country's wrongs." He was tried, condemned to death, and executed at Tyburn, and his remains were gibbeted on Southsea beach, at a spot now marked by the boundary obelisk near Clarence Pier. The dagger used by Felton is in the possession of the Earl of Denbigh. The incidents of the murder have been dramatically used by Dumas in his novel *Les Trois Mousquetaires*.

On the opposite side of the road is High Street Chapel, a very old Nonconformist place of worship in Portsmouth. It was built in 1718, and has played a large part in the struggles for religious and civil liberty in the borough. Many noted men have been connected with it. In the graveyard attached to the chapel are the remains of the noble John Pounds; here also is buried Sir John Carter, nine times mayor of Portsmouth. Among the early ministers to the chapel was John Hicks, who was prosecuted several times for contravening the Conventicle Act and was finally executed for supporting Monmouth. Hicks having escaped from Sedgemoor, was sheltered for one night by Lady Alice Lisle, at Moyles Court. She, although 71 years of age, was for this act the first victim of Jeffreys's assize.

A little further down High Street on the same side is a large house recently used as the headquarters of the Southern Command. It was prior to that the Governor's house, and its last occupant in that capacity was Prince Edward of Saxe-Weimar (1878-84).

Opposite is the famous George Hotel, whose history goes back to the time of James I. In those days it was a small thatched house with a water trough in front, and was known as the "Wagon and Lamb." At the end of the eighteenth century it reached the height of its glory, and was frequented by naval heroes, distinguished soldiers, statesmen, authors, poets, and even princes. The Duke of Wellington stayed here in 1814, but the "George" will ever be memorable as the house in which Nelson stayed for the last time in England. Mr. Saunders, in *The Annals of Portsmouth*, thus describes the occasion:

"Nelson arrived at 'The George Hotel' at six o'clock in the morning of the 14th September, 1805, rested and breakfasted; observing that a great crowd was assembled in the High Street, he stole secretly out of the back door in Penny Street. His retreat was soon discovered and the crowd rushed away, eager to see the face of the hero they venerated. They caught him upon Southsea Common, crowded round him, and struggled with each other to shake him by the hand. 'I wish I had two hands,' said he, 'for then I could accommodate more of you.' And the people cried 'God bless you, Nelson.' There on Southsea beach, near the spot where the old *Victory's* anchor rests, Nelson embarked. As the boat pushed off from the shore the people ran into the water once more to grasp that one hand of his and to wish him godspeed. Thus that one eyed, one armed, pale, shrunken, invalid hero passed away from us never to return."

Our next object of interest is the Museum. It contains some interesting relics, models, drawings, and old engravings illustrating the history and antiquities of Portsmouth. The building itself has some architectural in-

It was in course of erection in the year of Queen Victoria's accession, and was opened on her coronation day. It was then the new Guildhall, and replaced one that stood for 200 years in the middle of the street lower down. In his *Itinery* in 1543 Leland records that "Carpenter a rich man made of late time in the middle of the High Street a Town House." Thomas Carpenter was mayor in 1531 and again in 1537. In 1736 the old Guild Hall and Market was in a state of decay. It was demolished and a new one built on the old site, and opened in 1739. This, like its predecessor, was an obstruction to the traffic, but it stood for a hundred years. It was then demolished and the new one erected on the east side of High Street, with a market place beneath the council chamber like its old prototype. Soon this was found too small for the requirements of the rapidly growing borough. In October, 1886, the foundation stone of the present Town Hall was laid, and the building was opened on August 9th, 1890, by King Edward VII, then Prince of Wales.

St. Thomas's Church, the oldest building in Portsmouth, is seen from the High Street through a gap in the houses

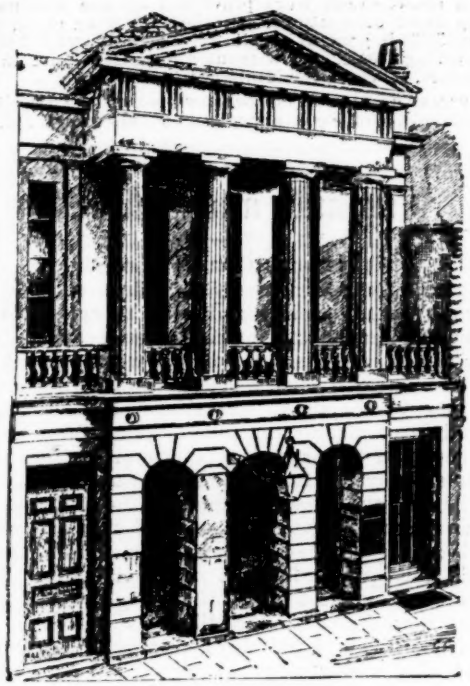


FIG. 6.—The Old Guild Hall.

caused by the demolition in 1891 of a gable-fronted hotel, the "Three Tuns." It was in this house that the Spithead mutineers had their headquarters. A conference was held here in a back room, and the mutineers were so long discussing the terms of peace that Lord Howe and his officers had to rest by sitting on the stairs.

Time and space will not now permit a description of St. Thomas's Church, nor of the Garrison Church behind the Grand Parade. Just before turning into the Grand Parade we pass the Soldiers' Institute. This building, before it came into the possession of Miss Robinson, was the "Fountain Inn." Another inn—the "King's Arms"—was also incorporated in the present establishment. This house was much frequented by the tradesmen of the town. On certain commemorations it was the custom for one of the guests to give a dinner party, or as it was called "throw a brick at the King's Head." The host marked the event by having his initials, with the date, cut in one of the bricks forming the corner of the building. Edmund Kean, who visited this house during his engagements at the theatre, was, on the authority of Mr. Saunders, one of those who "threw a brick at the King's Head."

If we leave High Street by Pembroke Road we shall pass the house in which John Balsir Chatterton, the harpist, was born; also at the corner of Penny Street the house in which George Cole, the artist, lived, and in which his son, Vicat Cole, was born. Behind Pembroke Gardens we can inspect the small remaining portions of the old walls and fortifications, and so take leave of old Portsmouth and begin our survey of modern Southsea, which "sweetly recommends itself to our gentle senses."

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

Vaccination.

IN reply to Dr. Chapple, on July 4th, Mr. Chamberlain said it was not possible to state definitely the proportion of children of the age of 10 years and under now living who had been vaccinated. The available statistics showed the number of children born in each year who were vaccinated within a period expiring at the end of the year following the year of birth. These statistics suggested that the proportion of 10 years and under who had been vaccinated was not more than 50 per cent. Statistics for each of the years 1912 to 1921 showed that the proportion of vaccinations to births had fallen from 50.1 per cent. in 1912 to 38.3 per cent. in 1921. The Ministry of Health had recently circularized local authorities as to the steps which should be taken on the occurrence of small-pox and all possible assistance was rendered by departmental medical officers to the authorities in those districts in which an outbreak occurred.

In answer to Mr. T. Thomson, Mr. Chamberlain gave the following percentages of vaccination to total births:

Year.	Percentage.
1872–1881	85.
1882–1891	82.2
1892–1901	68.0
1902–1911	67.9
1912–1921	43.4

The total number of cases of small-pox in England and Wales were not available for any year prior to 1911. The number of cases per 1,000 of the population for the period 1912–21 was 0.004. Mr. Thomson asked whether Mr. Chamberlain had any information which showed that the percentage of cases of small-pox had increased relatively to the decrease in the number of vaccinations. Mr. Chamberlain replied "Yes, undoubtedly." He added he thought that the fall in the vaccination figures was due to agitation in various parts of the country.

Lord Eustace Percy has provided a table showing the percentages of deaths to cases of small-pox in the last five years, dividing the deaths of vaccinated persons into age-groups and contrasting them with the death rate for the unvaccinated.

Year.	Vaccinated.			Unvaccinated.
	10 years and under.	Over 10 and under 40.	40 and over.	
1918 ...	—	3.4	3.4	Nil.
1919 ...	—	0.6	3.2	20.8
1920 ...	—	1.5	8.3	13.8
1921 ...	—	—	1.0	1.5
1922 ...	—	0.4	4.1	1.6

He said also that it was not considered desirable to issue a statement instructing parents and others how incipient small-pox might be distinguished from chicken-pox. It was the function of the medical practitioner to distinguish these cases, and the services of the medical officer of health were at his disposal in assisting diagnosis.

Health Insurance Finance.—Mr. Chamberlain gave, on July 2nd the following comparative figures as to benefits and costs of administration of national health insurance during the past three years:

	1920.	1921.	1922.
Amounts paid in benefits—	£	£	£
In England	17,570,000	20,093,000	20,513,000
In Scotland	2,371,000	2,832,000	2,794,000
In Wales	1,239,000	1,455,000	1,479,000
Cost of administration—			
In England	4,178,000	4,472,000	4,012,000
In Scotland	543,000	587,000	547,000
In Wales	325,000	360,000	322,000

Health Insurance and Voluntary Hospitals.—Sir E. Stockton asked the Minister of Health, on July 4th, whether in view of the amount of disposable surpluses of approved societies under health insurance he would consider the desirability of introducing legislation to allocate funds therefrom for the hospital maintenance of insured patients. Mr. Chamberlain said it was open to any approved society with disposable surplus to devote the whole or part to payments to hospitals or convalescent homes, towards securing therein the maintenance and treatment of members. Out of the surpluses on the first valuation a sum of £979,000 was set aside for this purpose by certain societies in England in

respect of the period from July, 1921, to June, 1926. The selection of additional benefits to be provided by a society rested with the members, and he did not think it desirable to introduce legislation to compel allocation for a particular object. Mr. Gerald Hurst mentioned that the Manchester Royal Infirmary spent about £70,000 a year maintaining nearly 5,000 persons insured under the Act without drawing any substantial contributions from approved societies.

Eyesight and Workman's Compensation.—Mr. D. G. Somerville asked, on July 4th, whether in view of the request for the inclusion of eyesight failure in the Workmen's Compensation Act the Labour Department possessed any reliable record showing how the several senses were affected by particular industries; and whether steps were taken to differentiate at any stage between failure due to advancing years and to conditions of work. Mr. G. Locker-Lampson replied that the Home Office possessed a great deal of information as to diseases and affections caused by particular industries and processes, but so far as regarded failure of eyesight it would not be possible to differentiate between the effect of the conditions of work, advancing years, and other possible causes. Asked as to railwaymen, Mr. Locker-Lampson said that certain affections of the eyes were already included under the Act of 1906 and the number was being added to.

School Dental Service.—Mr. Wood, the Minister of Education, on July 5th said that the Board of Education fully recognized the value of the school dental service, and proposals for its extension would receive sympathetic consideration. The number of authorities who had approved schemes for dental treatments had nearly doubled since 1914, but 25 per cent. of the county educational authorities had not provided school dental services. The percentage of county boroughs not providing services was 15, of boroughs 26, and of urban districts 23.

India and Opium.—During the debate, on July 5th, on the India Office Vote, Mr. Ponsonby said that the attitude of the Indian Government to the opium question was putting an obstacle in the way of reform. The United States Government had formulated a project for restricting the production of opium and the matter had come before a committee under the auspices of the League of Nations last month, but the representative of the Indian Government had entered a reservation that entirely blocked the way. The contention was that the use of raw opium in India according to established practice and its production for such use was not illegitimate under the Opium Convention. He appealed to Lord Winterton, Under Secretary for India, to state the precise reason for India's refusing to join with the other powers, and declared that the world used 125 tons of opium annually for medicinal and scientific purposes while 1,350 tons were "scattered broadcast." In reply Lord Winterton said that India had carried out to the letter the Hague Convention on opium, and had reduced the poppy cultivation from 613,000 acres in 1905–6 to 117,000 acres in 1921–22. He denied that India had taken up an outrageous attitude at the recent convention in Geneva, and said that when the resolution before the convention was eventually passed the American delegates accepted the reservation made by the Indian representatives.

The Adjustment of Taxation.—On the Third Reading of the Finance Bill, on July 4th, Sir Sydney Russell-Wells referred to numerous criticisms made against the Government for having reduced the duty on beer and not that on sugar, and also for maintaining the duty on tea at the present rate. Tea, he said, was undoubtedly an article of inestimable benefit to men and women, and the argument was used that it should never be taxed, because it was a food. On the other hand, beer was said not to be a food. The real facts were that tea was a pure drug without any food value, but beer, while it contained alcohol, contained food, and the amount or nutriment in a glass of beer was very considerable. It was not in the alcohol, but in other substances present in beer. Sugar was not a necessary; for many centuries no sugar was eaten in this country at all. Sugar was undoubtedly nourishing, but the number of calories in a gram of sugar was not as great as the number in a gram of starch. Money spent on buying sugar, even at the old price of 2½d. a lb., did not produce so much nutriment as would be obtained if the money were spent on wheat. Sugar was a luxury which all classes of the community consumed. After speaking generally in support of the Budget, Sir Sydney referred to the burdens of the income tax payers. The struggling professional man constituted a large proportion of the community, and to say that he was not as deserving of some assistance as the unemployed was not true. Those who had contributed the bulk of the taxation and borne the bulk of the burden should have relief if it were given in fair proportion.

Midwifery Fees.—In answer to Dr. Fremantle, on July 4th, Mr. Chamberlain said that the Order of 1847 as to fees had not been revised, but in a number of cases special arrangements between the guardians and their medical officers as regards midwifery fees had already been approved. He would consider the question of a revision of this part of the Order.

Royal Army Medical Corps.—Mr. Becker asked, on July 10th, if all officers in the Royal Army Medical Corps eligible for selection to the higher ranks were personally interviewed by the Selection Board, and whether assurance would be given that none would be passed over who was not so interviewed. Colonel Guinness replied that a system of inviting officers to attend and make out a case for their own promotion would not be at all satisfactory, even if all the officers concerned were always available for such attendance, which they were not. It rarely happened, however, that an officer was not known personally to the majority of the selectors.

Answers in Brief.

Mr. Chamberlain has stated that draft regulations as to the labelling of skimmed dried milks had been prepared and were being circulated for preliminary discussion, and that it was expressly provided in the Milk (Special Designations) Order, 1923, that milk sold as "pasteurized" milk should not be heated more than once.

Mr. Chamberlain said that the Government could not undertake to introduce legislation as to "patent" medicine during the present session.

The Under Secretary for Health, Scotland (Captain Elliot), has stated that the number of deaths in Scotland from tuberculosis was 5,737 in 1921 and 5,818 in 1922.

The Minister of Education is unable at present to reconsider the existing arrangements as to the absence of children from elementary schools to receive sanatorium, hospital, or other medical treatment when ordered by the school medical officer. Such absences do not count as attendances under the code.

The Ministry of Pensions is issuing new regulations to have *x*-ray examinations made in doubtful cases to try to avoid such errors as in a case to which Colonel Ward called attention where a man had applied for a pension on the ground of neurasthenia and was found subsequently to have a jagged piece of shrapnel near the heart.

Major Tryon said that at the cost of the Pensions Ministry approximately 76,500 officers and men were receiving treatment, of whom about 41,600 were prevented by the treatment from following their occupations. Of these 18 were in military hospitals and 3,650 in general hospitals. These figures did not include men receiving treatment, without allowances, from their panel practitioners, of whom the Ministry had no record.

The average cost per day of pensions patients at hospitals under the direct control of the Ministry of Pensions was 8s. 2½d. each.

England and Wales.

University College, London.

A RECEPTION given at University College on July 7th was attended by head masters and head mistresses of schools, by many diplomats and official guests, and by a large number of old students. The object was to afford the visitors, who numbered some 3,000 persons, an opportunity of seeing some of the recent extensions of the College buildings, and in particular the new building for anatomy and the extension of the physiology and pharmacology buildings, made possible by the Rockefeller benefaction. A statement presented on the occasion showed the gradual progress which has provided the great series of buildings now at the disposal of the College, of which in future the British Medical Association will be a near neighbour. The main block, erected in 1827 from the designs of Mr. William Wilkins, now contains the libraries and the Flaxman Gallery. The Birkbeck buildings, erected in 1847, now houses part of the department of applied mathematics and mechanics, while the Brundrett block, erected in 1894, includes the general laboratory of physics. The south wing, erected between 1869 and 1874, provides most of the classrooms of the Faculty of Arts. The north wing, built between 1871 and 1881, includes the Slade School of Fine Art and the department of botany and zoology. The engineering wing, begun in 1894, has been completed this year by extensions recently opened. The chemistry laboratories, lying on the north side of the main College buildings, were completed in 1913, the Bartlett School of Architecture in 1913, and the department of eugenics in 1914. To the south of the main College buildings lies the medical sciences block, of which the Physiology Institute was erected in 1909, the Pharmacology Institute in 1912, and the anatomy building in 1923. To the east of the main block lies the Great Hall, formerly All Saints' Church, Gordon Street, which will be converted into a war memorial hall. In all departments the visitors were shown objects of interest. In the Flaxman Gallery was the panel by the Slade Professor (Henry Tonks) representing four of the founders, Jeremy Bentham, Thomas Campbell, Henry Brougham, and Henry Crabb Robinson. In the general library the librarian, Mr. L. Newcombe, had on exhibition a number of manuscripts, a collection of English chronicles, and a number of early printed books, as well as bindings from the fourteenth century onwards. Demonstrations were given in the department of physiology and in the new anatomy building; in the department of electrical engineering wireless telephony transmitters and receivers and a

number of other interesting apparatus and experiments were shown. The departments of architecture and town planning, of applied statistics and eugenics, of astronomy, physics, chemistry, and botany, as well as others, were all open for inspection. The last demonstration was by Miss Ida Ward on the use of phonetics in curing speech defects. University College Hospital and its medical school were also open to inspection.

Queen's College, Birmingham.

After being closed for some years, Queen's College, founded by Birmingham medical men in 1828, will resume its activities in October. As the old buildings in the heart of the city proved unsuitable the Council has purchased and converted into a residential college Bishop's Croft, the residence of the Bishops of Birmingham. Here a medical student can obtain all the advantages of college life and the full course of the medical school and the university and hospitals for £140 per annum inclusive. In view of the increased costs at Oxford and Cambridge and elsewhere, many will be glad to know that the endowments of this nearly century-old foundation are once more available for the furtherance of medical education. The College has some exhibitions, of which the principal will gladly send particulars.

Liverpool Course for Practitioners.

The hospitals comprising the Liverpool Clinical School have arranged to hold lecture demonstrations for practitioners during the University terms. The programme is so arranged that on any one day a demonstration will be given by one hospital only. Thus in each week, except the third week in the month, a demonstration will be given at the Royal Liverpool Children's Hospital on Monday, at the Royal Southern Hospital on Tuesday, the David Lewis Northern Hospital on Wednesday, the Stanley Hospital on Thursday, and the Royal Infirmary on Friday. In the third week in each month there will be a demonstration at the Hospital for Women, Shaw Street, on Monday, at the Liverpool Maternity Hospital on Tuesday, St. Paul's Eye Hospital on Wednesday, St. George's Hospital for Skin Diseases on Thursday, and Eye and Ear Infirmary on Friday. The lecture demonstrations, which will begin at 3.30 p.m. on each day, will be largely clinical in character. No fee will be charged. Further information can be obtained from the Secretary of the Clinical School of the University of Liverpool, 61, Rodney Street.

The History of the Royal Southern Hospital, Liverpool.

A jubilee commemoration history of the Royal Southern Hospital, Liverpool, compiled by Dr. Charles J. Macalister, has been issued with an appeal for funds. The hospital was founded in 1838, as the Southern and Toxteth Hospital through the efforts of medical men and a provisional committee of "parties favourable to the formation of the institution"; the first building was opened for the reception of patients in 1842. In 1849 the committee, looking for ways and means, secured the services of Mme. Jenny Lind, with such good effect that £1,300 was obtained. Thus, as the report states, "the requirements of taste and fashion came in aid of the calls of humanity." In memory of her kindness a ward in the present hospital bears her name. In 1857, the number of beds at first only 30, had increased to 100, and it is noteworthy that a special children's ward, the first of the kind provided in a general hospital, was opened. The name of the hospital was now changed to the Southern Hospital, and as there were now two physicians on the staff, the hospital was recognized by the Royal College of Surgeons and the Society of Apothecaries as an institution where students could be trained for the qualifying examination. Eleven years after the completion of the building, which received additions as funds accumulated, the sanitary conditions of the hospital left much to be desired. In 1861 it had to be closed for three months owing to an outbreak of fever apparently introduced by sailors suffering from dysentery and typhus. In spite of laudable attempts at remedying the hygienic conditions, the committee decided, in 1864, that an entirely new building would be essential if the hospital were to serve its main object, and in 1867 a fresh piece of land was obtained and the foundation stone of the present hospital was laid by the Earl of Derby. In May, 1872, the new building was opened by Prince Arthur, the present Duke of Connaught, and the prefix Royal was added to the name. In September, 1872, it was used for the reception of patients. During the last fifty years notable additions have been made. In 1891 a detached nurses' home secured rest for the nursing sisters, who, up to that time, had bed-sitting rooms attached to the wards. In 1910, a new out-patient department was opened and called "the William Adamson Out-patient Department" in recognition of the signal services rendered as a member of the committee and preseident of the hospital by the late Mr. W. Adamson for close upon fifty years. Of the other activities of the hospital, mention should be made of the *x*-ray department established in 1896, and the opening of a ward for tropical diseases by Lord Lister in 1889, where clinical work was carried on until 1911. With the opening of the new laboratory for tropical diseases adjoining the university, the clinical work was transferred to the Royal Infirmary. The present appeal in commemoration of the jubilee is for money to complete the electro-therapeutic and massage department, and for the raising of an endowment fund for after-care work. In the surgical experience of the hospital Dr. Macalister has given an epitome of the advances due to antiseptic and aseptic methods. The late Dr. William Alexander, Mr. Frank T. Paul, and Sir Robert Jones were makers of the surgery in the Royal Southern Hospital. On the medical side the name of Dr. John Cameron, the second in order of the physicians attached to the institution, stands out pre-eminently. He was appointed in 1848, and only retired from active work after sixty years' service. Dr. Macalister, in the section dealing with "personal recollections" of past members of the staff, not only has revealed the good work they did but has placed it in a light that shows what manner of men they were. Dr. William Carter, who was appointed in 1870 as physician and retired in 1907, did much to promote the reputation of the hospital, and so highly valued were his services that a new rule was framed to retain them. As professor of materia medica and therapeutics in the university, Dr. Carter was keenly interested in the action of drugs. Experiments on himself are mentioned by Dr. Macalister in an entertaining way. Changes in type of patients are discussed in the concluding section of this history, and the great improvement socially, and especially in sobriety, described.

A list of the medical and surgical staffs and resident medical officers from 1842 down to 1922 is given. An appendix contains a short sketch of the achievements of Dr. John Nottingham, Sir Ronald Ross, who was physician to the tropical ward, Dr. William Williams, etc.

Quite apart from the cause that prompted Dr. Macalister to write this interesting history, there must be many medical men who were former resident medical officers to whom this record of an institution with which their first years of professional life were associated will be particularly attractive.

Central Midwives Board.

The monthly meeting of the Central Midwives Board for England and Wales was held on June 21st, Sir Francis Champneys presiding. A letter had been received from the Ministry of Health approving the present rules for a further period of six months from July 1st, 1923. It was decided to inform the registrar of the Joint Nursing and Midwives Council of Northern Ireland, in reply to a letter received from him, that (*a*) the Board has for a long time represented that the words "habitually and for gain" ought to be deleted from Section 1 (2) of the Midwives Act, 1902, and hopes that in the near future legislation will effect what is desired; (*b*) that the Board thinks that the suggestion of adding to the end of Subsection 2 the words "Nothing in this Subsection shall exempt from the duty of certification a woman habitually acting as a maternity nurse under the direction of a registered medical practitioner" is impracticable; (*c*) that whilst appreciating the desirability of ensuring that practising midwives notify their intention to

practise, the Board is of opinion that the question of charging midwives an annual fee is one which requires very careful consideration, as in practice it might produce many complications and difficulties.

Scotland.

PUBLIC HEALTH AUTHORITIES.

A WHITE PAPER has been issued by the Scottish Board of Health containing two reports by its consultative councils on a reformed local authority for health and public assistance. The first report deals with local health administration and general health questions; the second with the application of similar principles to special conditions of the Highlands and Islands. The reports deal with the local administration of the health and public assistance services by county councils, district committees, town councils, parish councils, education authorities, insurance committees, and other local authorities; and contain recommendations which affect the status and constitution of these authorities, with the object of co-ordinating the local administration of health and public assistance. The price of the White Paper is 1s., and it can be obtained from the Stationery Office (Edinburgh, 120, George Street). We propose to refer to these reports more at length in an early issue.

PUBLIC HEALTH OF EDINBURGH.

The Medical Officer of Health for Edinburgh, Dr. William Robertson, in presenting the annual report of the Public Health Department for 1922, observes that in the past local authorities have performed their full share of treatment. In the possession of splendidly equipped institutions ready to cope with epidemics and the provision of admirable places for dealing with tuberculosis in all its forms, there is a suggestion that local authorities may have tended to step beyond their sphere. The report urges that they should now concentrate upon methods and means that will reduce the demands upon these institutions; much that is spent upon institutional treatment could be saved if the breeding places of disease were removed. Tangible reductions in the cost of sanatorium treatment and in child welfare schemes could be confidently expected as soon as it was possible to offer improved housing facilities for those most in need of better habitations. Houses could neither be demolished nor closed on a wholesale scale until there was better and more attractive accommodation to offer to the dispossessed. The search for a way to reduction of infantile mortality directed attention to better housing accommodation and improved social habits.

The total number of deaths registered in Edinburgh during 1922 was 7,012, in a population estimated for the middle of the year at 423,155. This gave a corrected death rate of 15.2 per 1,000, as compared with a rate of 14.4 in 1921. The increase might be attributed to an outbreak of influenza in the early part of 1922. Nevertheless, Edinburgh occupied a favourable position as compared with other large centres of population in Scotland; of the larger burghs only two—Clydebank, and Motherwell and Wishaw—showed lower death rates than Edinburgh. In the various wards of the Edinburgh area the greater death rates were found in the more crowded parts; thus St. Giles Ward was highest with a death rate of 19.8 per 1,000. The infantile mortality rate was also highest in this ward, being 141 per 1,000 births as compared with 91 per 1,000 for the city generally. Suburban wards showed much lower figures —namely, Colinton a general death rate of 8.7 and infantile rate of 20, Liberton rates of 11.2 and 76 respectively, and Corstorphine 12.6 and 23 respectively. As showing the severity and suddenness of the influenza epidemic, the following figures are quoted in the week ending January 14th: the deaths from influenza numbered 15 and the death rate from all causes was 18.7; by January 21st the figures were 71 and 34.3 respectively; by January 28th 118 and 45.3 respectively; by February 4th, 99 and 39.7; afterwards they fell off till on March 4th they were 8 and 17.0 respectively.

The statistics of tuberculosis and cancer are of considerable interest. The deaths from tuberculous disease numbered 532, equal to a mortality rate of 1.26 per 1,000 of population. The death rate for respiratory tuberculosis was 0.9 per 1,000, the same as recorded for the year 1921, and the lowest recorded for this city. This would appear to indicate that the disease is gradually yielding to the efforts which are being made to combat it. On the other hand, the number of deaths from cancer, in all 657 (giving a death rate of 1.5 per 1,000 of population, or nearly one death in every ten deaths), showed an increase of 32 over the previous year. As regards the age of death, 61 were persons under 45 years, 313 were between 45 and 65 years, and 283 were over 65 years.

The total number of notifications of infectious diseases received by the department during the year was 4,888 as compared with 5,952 in 1921. This large fall is in the main to be explained by a reduction of 461 notifications of scarlet fever, and by the fact that chicken-pox ceased to be notifiable in September, 1921, while for nine months in 1921 there had been 505 intimations of this disease. No cases of small-pox were notified during the year. Enteric fever continued to be infrequent; only 16 cases were reported, of which three occurred in one family; there were only four deaths from this disease, of which 2 unfortunately occurred in hospital nurses. The notifications of diphtheria numbered 800 as compared with 991 in 1921, the case rate being 189 per 100,000 of population as against a case rate of 236 per 100,000 for 1921. The mortality from diphtheria was 7.1 per cent. of the cases notified, and it is interesting that this percentage has been lower only on four occasions since the year 1880. The cases of scarlet fever treated in hospital were also of a mild variety.

With regard to venereal diseases, the work has been carried out in association with the Royal Infirmary, the Edinburgh Hospital for Women and Children, and the Royal Maternity Hospital, and out-patient treatment for females had been arranged at several dispensaries. The number of new cases treated in the year was 3,250, and the total attendances numbered 95,383. This shows a slight diminution (159) as compared with the number of new cases in 1921, but a considerable rise in the number of visits.

RESEARCH DEFENCE SOCIETY MEETING.

THE Edinburgh Branch of the Research Defence Society held a meeting on July 2nd in the Physiology Department of the University, Sir Edward Sharpey Schafer occupying the chair. Office-bearers and council for the ensuing year were elected, and the report by the honorary treasurer showed a balance of £43 3s. 6d., from which it was resolved to forward a contribution of £30 to the funds of the parent society in London. A lecture was afterwards delivered by Dr. John Comrie, lecturer on the History of Medicine in Edinburgh University, dealing with "Edward Jenner and Vaccination." The lecturer sketched the early life of Jenner, dealing especially with his friendship for John Hunter and the long-continued correspondence between the two men, Jenner's early reputation as an expert naturalist, his researches upon the habits of the cuckoo, which had been confirmed in the last few years by cinema-photography, and his great popularity as a practitioner. Jenner's labouring efforts to elucidate the problems of cow-pox and small-pox were next dealt with, and finally a number of slides were shown illustrating the great decrease that had taken place in the incidence and mortality of small-pox in association with vaccination and re-vaccination.

VISIT OF DR. W. MAYO TO EDINBURGH.

A lecture was delivered last week to the students attending the class of clinical surgery by Dr. William Mayo, Rochester, U.S.A. The address was delivered in the M'Ewan Hall of Edinburgh University, the chair being taken by Sir Harold Stiles. The subject was "Some of the allied sciences in relation to surgery," and a considerable part of it was taken up with a discussion of physics in relation to surgery. The lecturer believed that the recent great advance in medicine came by way of biophysics and biochemistry, between which the borderline had disappeared. A hearty vote of thanks was proposed to the lecturer by Professor Lorrain Smith, dean of the Faculty of Medicine.

Ireland.

FREE STATE INTERNMENT CAMPS.

THE report of the International Committee of the Red Cross was placed before a recent sitting of the Dail by General R. Mulcahy, Minister of Defence. In the course of the report it was stated that: "As a result of the numerous representations made to it on the subject of the

reatment of prisoners in Ireland, the International Committee of the Red Cross appointed MM. Schlemer and Haccius to go to Dublin to obtain authority from the Irish Government to institute an inquiry of a purely non-political and technical nature into the position of the prisoners."

The delegates of the International Committee of the Red Cross were received by Mr. Desmond Fitzgerald, Minister of External Affairs; Mr. Walshe, Secretary, and General Morrin, Director of Army Medical Services. Considering that the character of the International Committee of the Red Cross confers on it the right and duty to intervene when an appeal is made to it, and when the principles of humanity, which should be recognized by the belligerents as much during wars as following them, are publicly involved; considering also that the nature of the International Committee of the Red Cross and the experience gained by it offer every guarantee of the impartiality of its inquiries, and of the manner in which all leanings towards any but purely humanitarian considerations should be avoided, the Irish Government decided to grant the authority requested by the International Committee of the Red Cross, and to accord to the delegates every facility for visiting the prisons and internment camps of the country, and of making a report on the treatment of those detained in them. M. Haccius was delegated to visit the prison camps from the point of view of their organization and accommodation, and of the sanitary conditions of the internees. The following are extracts from the report submitted by the delegates:

The total number of prisoners and internees is about 11,500 men and 250 women. Our delegate visited the principal camps, comprising a total of 7,369 prisoners. The treatment of these prisoners is devoid of all hostile spirit, and the general principles adopted by the 10th International Conference of the Red Cross are observed. The Government refuses the status of "prisoners of war" to the prisoners, but in reality treats them as such. The delegate particularly draws the attention of the committee to the fact that nowhere did he find a wounded or sick person left without medical treatment. On the contrary, he found everywhere a carefully organized medical service. The serious accusations made on this subject appear to him unfounded.

The delegate was not able to visit the prison at Kilmainham, where 250 women are detained, but he has no reason to believe that the treatment there is different to that adopted at Mountjoy. Thirteen of these prisoners had been on hunger strike since the day of their arrest to obtain their release or immediate trial, and not as a protest against the prison régime. This fact is verified by their written statements. The delegate did not consider it his duty to insist on getting into touch with these prisoners, fearing that his intervention, misinterpreted, would only encourage them to persist in their attitude, and give rise to a new strike. During his sojourn three of these prisoners were released. The buildings of the old North Dublin Union are in the course of alteration for the reception of those detained in Kilmainham. These buildings, with the surrounding garden, will fulfil all desirable hygienic conditions.

The instructions given by the International Committee of the Red Cross to the delegate exclude certain representations and sworn inquiries bearing on individual complaints. It is a fact that searches have taken place in various private hospitals, but the working of these hospitals has not been interfered with. There are grounds for the complaints of overcrowding in Mountjoy prison. The complaints regarding the prohibition of corresponding with prisoners' families, sanitary conditions, and food in the camps are unfounded.

With reference to the internment camp at Tintown, it is stated as follows:

Sick—72 men in the infirmary, 25 men in the surgical hospital. There are 6 wooden barracks used as an infirmary; these buildings are in good condition and well heated. The sanitary staff is composed of three medical doctors and army nurses. A medical visit daily, which anyone wishing to see the doctor can attend. There are no epidemics. A certain number of men who arrived daily are affected with scurvy, and have been isolated from the rest while being treated. The sterilizers are installed in a stone-work building and function permanently. The wounded, who have submitted to surgical treatment, are nursed outside the camp in a pavilion isolated from the barracks hospital. The rooms are provided with every comfort and contain from 4 to 5 beds. The patients seemed to be very grateful to the doctors for their devoted care and attention. The prisoners themselves organize the interior service of the camps, kitchen, fatigue duty, etc., and are responsible for material which is not replaced in case of wilful destruction. I have not had any complaints to register concerning the food, medical care, or treatment, not having been authorized to question the prisoners. The men are not obliged to do any compulsory work, and are at liberty to walk about the enclosure of the camp. I was present at a football match.

My visit of inspection to the camp made a favourable impression on me. The conditions correspond with the normal treatment of prisoners of war, in conformity with the principles which inspires the Convention of Geneva.

With reference to the conditions at Newbridge the following observations are contained in the report:

Patients—30 men in the infirmary. The former recreation hall has been converted into an infirmary. A special apartment is set aside for the treatment of those suffering from the itch. The medical staff consists of two army doctors and several army nurses. There is a daily medical visit. No epidemics. Two disinfecting rooms are in working order. Organization and complaints—the same as Tintown. Correspondence—reception and dispatch—one letter each week. Parcels are distributed regularly but must be opened under supervision.

Correspondence.

EARLIER NOTIFICATION OF TUBERCULOSIS.

SIR,—The letter of the Deputy Clerk of the London County Council (published in the BRITISH MEDICAL JOURNAL last week, p. 43) is well timed. There is no doubt as to the importance of the issue he has raised. The whole subject of notification of tuberculosis merits consideration on the part of administrative authorities, central and local, no less than on the part of medical practitioners, collectively and individually. Because of that the subject has been selected for discussion at the Annual Conference of the National Association for the Prevention of Tuberculosis to be held at Birmingham this week. It may be expected that many points of interest will emerge and conclusions of practical moment be arrived at.

I would not wish to forestall the discussion. But, as the meeting will be over before this letter can appear in print, you will perhaps permit me to draw attention to the proceedings of the meeting which will in due course be reported. Meanwhile, as one who comes much in contact both with doctors and with administrators concerned with the matter, and likewise with students in training for the profession, I would voice the view that failures in respect of notification in part occur *per incuriam*. The hard-working doctor, not trained in business habits, is a little prone to slackness in respect of what may appear to him a formality. To this may be added that the attention of many practitioners, especially in the past, has not been very forcibly drawn to the point. Apart from the trifling fee attaching thereto, there is an absence of the more urgent motive which is present to his mind in connexion with acute fevers.

In some parts of the country the evident benefit accruing to the patient from notification—in the way of facilities for treatment and prevention and economic assistance—is so slight as to offer little stimulus to the medical attendant. Indeed, to some extra-conscientious doctors it may seem that the disadvantages possibly accruing to the patient from notification, especially in some areas, outweigh the advantages, while, perhaps, some more timid individuals may be fearful of the results attaching to a reputation for over-zeal in obeying the statutory demand. It may be that in this respect an easy-going, casual attendant is even preferred to the other.

However produced, the neglect to notify, and particularly the failure to notify at an early stage, is finally fraught with disadvantage to all concerned, and plays a considerable part in neutralizing the efforts of preventive medicine. A good deal, it seems to me, might be done by the health authority, local and central, to increase the doctor's interest in the procedure. A telling statement from headquarters, or a sensible conversation, would win his confidence and co-operation, while a suggestion of threat might have the opposite result.

Emphasis should certainly be laid on the facilities for diagnosis and for treatment which exist widely throughout the country, and on the value of notification in the direction of increasing and improving such when they are inadequate. From the published health reports it is evident that quite a number of medical officers of health have the subject well in mind and, in a number of instances, have adopted measures likely to be helpful within their area. A comparison of different areas in respect of the

number of notifications and the number of deaths from pulmonary tuberculosis is of interest as indicating the variations which exist in this matter. From many talks with doctors and students I am satisfied that the sound line of approach is by the way of awakened interest, *esprit de corps*, and, if you will, patriotism.—I am, etc.,

University of Edinburgh, July 8th. R. W. PHILIP.

SIR,—In the BRITISH MEDICAL JOURNAL of July 7th (p. 43) there is published an interesting letter from the Deputy Clerk to the London County Council headed "Earlier notification of tuberculosis."

I do not think many of those who have to do specially with tuberculosis would declare it as their belief that the failure on the part of medical practitioners to notify cases earlier is due to "wilful neglect or refusal to carry out the Tuberculosis Regulations" of the Public Health Act. It would have been, indeed, surprising if the conference between the Public Health Committee of the London County Council and representatives of the metropolitan borough councils had come to the conclusion "that prosecutions would be the most hopeful means for increasing the proportion of early notifications."

The earlier notification of tuberculosis is dependent on earlier diagnosis, which again is dependent on the skill of the medical practitioner. A practitioner cannot yet be prosecuted for lack of skill in diagnosis, or which of us would escape prosecution at some time or other in the course of our professional careers?

The real clue to the problem—how to obtain earlier diagnosis and therefore earlier notification—is mainly to be found in the final clause of the Deputy Clerk's letter, which appears as a sort of "addendum" or afterthought. He was instructed—he tells us—to invite the London Panel Committee and the British Medical Association "to direct the attention of their members to the fact that the services of the tuberculosis officers are available for consultation, etc."

In the county area in which I myself work as tuberculosis officer it is unquestionably the fact that a majority of patients, by the time they come under official notice, are already in an advanced—or, at least, not an early—stage of the disease. This, of course, does not necessarily imply that the medical practitioner has failed to diagnose the case earlier. It may simply be that the patient has put off going to his doctor month after month, until, when at last he goes, the disease has become already firmly established. Still there are undoubtedly many cases where patients attend their doctor for several weeks or even months for vague symptoms of "bronchitis," "catarrh," "colds," etc., who eventually prove to be cases of pulmonary tuberculosis; and if only all such cases were referred at an early period to the tuberculosis officer for examination, or a consultation with the tuberculosis officer were invited, a distinct rise in the number of cases diagnosed "early" would result. As the Chief Medical Officer of the Ministry of Health says in his annual report (1920, p. 85):

> "The medical practitioner should, therefore, not hesitate to refer for the advice of the tuberculosis officer not only those cases in which indubitable signs of tuberculosis are already present, but also those patients who show any symptoms which may suggest the slightest possibility of early tuberculosis. A practitioner fails in his duty to his patient if he continues to treat for long periods cases of debility or those suffering from bronchitis or recurring colds or pleurisies without having the most searching examination made to exclude tuberculosis."

Unfortunately not all Local Medical and Panel Committees view with favour the tuberculosis organization which is now general throughout the several counties and county boroughs. For instance, the Local Medical and Panel Committee for Cheshire has declared its opposition to the whole tuberculosis scheme, and would like to see tuberculosis dispensaries and tuberculosis officers abolished. In this case there is reason to doubt that the Committee really represents the attitude of the bulk of medical practitioners, but the spirit of hostility is none the less deplorable. The Departmental Committee on Tuberculosis stated at the very beginning of the consideration of anti-tuberculosis schemes, "It is of primary importance to the lasting success of any scheme dealing with tuberculosis that it should enlist the hearty co-operation and stimulate the interest of the general medical practitioners of the country." If this co-operation is lacking, the success of any anti-tuberculosis organization on public health lines can never be assured under present conditions of medical practice, and failure to secure early diagnosis of the disease will continue to be one of the stumbling-blocks in the way of dealing successfully with tuberculosis.—I am, etc.,

June 8th. E. WEATHERHEAD, Tuberculosis Officer, North-East District, Cheshire

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"DIAPLYTE" VACCINES AND ANTIGENS.

SIR,—In view of the striking application by Professor Dreyer of the formaldehyde-acetone method of defatting or diaplyting the tubercle bacillus, it may be of interest to workers in this field to record the following observations in regard to the preparation of red blood cells for phagocytosis by human leucocytes.

If one drop of a suspension of the red blood cells of the sheep, thoroughly washed in normal saline, be incubated in a closed cell with two or three drops of human (C.J.B.) blood, an inhibitory or toxic influence is exercised by the washed sheep's red cells on the human leucocytes. Very few leucocytes emigrate from the clot or adhere to the slide, and the few cells which do emigrate show marked signs of cytolytic change. This effect is true of the red cells of individual sheep only, and after testing the red cells of over 100 sheep I find that about 70 per cent. are toxic and about 30 per cent. non-toxic to my own leucocytes. In the latter group free emigration of leucocytes takes place on incubation, many leucocytes show sheep's red cells adherent to them, and many contain ingested sheep's red cells.

If now the washed red cells from the blood of a sheep which is known to be toxic to human leucocytes be first treated with a 1 per cent. solution of formaldehyde in normal saline, centrifuged, washed, and then treated with a 5 per cent. solution of acetone in normal saline (to the verge of haemolysis) and again rewashed and incubated with human (C.J.B.) blood, the sheep's red cells, as the result of the treatment by formaldehyde and acetone, will have lost their toxicity. Free emigration and ingestion of the sheep's red cells by the human leucocytes will take place.

If, however, the rewashed red cells so treated be resuspended and reincubated in their native sheep's blood serum, then, on rewashing and reincubation they will be found to have regained their original toxicity.

Thus, whatever be the exact nature of the material which gives the sheep's red cell its toxic influence, it is probably derived in some way from the sheep's blood serum, which is in itself very toxic to human leucocytes.

But this detoxication of sheep's red cells (by formaldehyde and acetone) can also be obtained by treating the washed red cells by certain human blood serums. The red cells are immersed and preferably incubated for an hour or more in the blood serum of an individual previously known to exercise an opsonic effect on sheep's red cells. The suspension is then centrifuged, the cells are well washed in normal saline solution, and when incubated with the same (C.J.B.) blood are found to be non-toxic.

The fact suggests that the toxic coating on the sheep's red cells can be removed, or its toxic nature reversed, by immersion in human serum of an opsonic character. It is possible that the immunity of normal red cells to attack by the own leucocytes, while circulating in the blood, may depend on a delicate interaction between the red cells and the blood plasma in which they are suspended.

There is also some evidence that while the detoxicating effect exercised by an opsonic serum on toxic red cells is often associated with an agglutinating action on the same cells, yet the two effects are not entirely dependent the one on the other. Thus both agglutinating and non-agglutinating serums may opsonize the same red cells.

A further study of the detoxicating and opsonic effects of different chemical substances, and of different blood serums on the red blood cells of the sheep and other animals, and also on the red cells of human individuals under different conditions, is bound to throw additional light on the mea

by which, and the ways in which, bacilli and other organisms may be rendered more easily digestible by human leucocytes.

This letter is in the nature of a preliminary communication only. Other facts have come out in the course of the inquiry which I hope to publish later.—I am, etc.,

Leicester, July 4th. C. J. BOND.

BLOOD SUGAR ESTIMATIONS BY GENERAL PRACTITIONERS.

SIR,—In my belief, not only is it within the province but it is the duty of a general practitioner to carry out blood sugar estimations. I have done so for years. For the last two years I have used exclusively Maclean's test, which can easily and accurately be carried out in twenty minutes.

Diabetes mellitus does not seem to be understood by the average general practitioner, nor by many "specialists." Yet the modern treatment of diabetes is based on an enormous amount of accurate research, and its various chemical and dietetic problems are amongst the most fascinating in medicine. Does the "busy practitioner" care for none of these things?

I have been using insulin since it became available in this country, and I know of nothing in medicine or surgery comparable to it in its results. Thyroid therapy pales into insignificance.

We hear too much nowadays of the "busy practitioner." He seems to stand where his grandfathers stood, and makes no attempt to keep abreast of modern research. Modern medicine does not consist in rapidly seeing numbers of patients without any attempt to "bottom" cases; nor does it consist in prescribing stock mixtures. How can advances ever be made if the general practitioner is not to waken up?

I have been amazed at the apathy of the profession over insulin, at the reluctance of the profession to master the blood tests and so make the treatment available. "Without vision the people perish" is peculiarly true to-day. My partner and I not only do our own blood tests, but we do all our blood urea estimations, urea concentration tests, etc., and at the same time carry on a very large practice.—I am, etc.,

Hornsea, E. Yorks, July 3rd. ALEX. J. W. CALDER.

SIR,—Dr. Oxley's letter in the JOURNAL of June 30th (p. 1115) is timely. Undoubtedly there are some medical men in general practice who are quite capable of carrying out the blood sugar estimations as described by Professor Maclean; who have the time necessary, and will do the work with accuracy. But it is equally certain that this analysis is not suitable for the majority of men in general practice.

Professor Maclean's book is really excellent, and should be in the hands of all who have charge of diabetics, but I venture to suggest that the blood sugar estimations are not so simple as that book impresses upon the reader. The fifteen pieces of special apparatus mentioned by Dr. Oxley can be considerably reduced for the actual analysis, but the danger is the liability to error due to the variability of the solutions used in the analysis. The acid sodium sulphate solution is unstable, and it is difficult to obtain the correct degree of acidity with a small quantity. The sodium thiosulphate solution is most unstable, and must be titrated with iodine when first made and at frequent intervals. The standard solution of copper I have found to be very variable, and its exact strength must be carefully determined before it is used. It will be noticed that Professor Maclean uses the word "*about*" 11 c.cm. of N/400 sodium thiosulphate will be required for 2 c.cm. of standard copper solution. I have never found that exactly 11 c.cm. are required. The exact amount must be accurately determined and the necessary corrections made in arriving at the result. Without these facts being clearly understood, and the strength of the solutions of reagents being estimated before the blood is examined, the liability to error is very great.

The result required is the percentage of blood sugar in 0.2 c.cm. (about two large drops) of blood to two points of decimals, and the second decimal figure is generally the all-important one.

I know the conditions of life of a busy general practitioner; in the past I have spent many years in that capacity; I know the difficulties of accurate analytical work even in a well equipped laboratory, and I agree absolutely with Dr. Oxley that blood sugar estimations should be done in a laboratory, and that very few general practitioners can give the time required for this work.—I am, etc.,

Hastings, July 4th. A. H. HEADLEY HUCKLE, D.P.H.

POLYTHELIA.

SIR,—The subject of polythelia being now under discussion in your paper, the following notes may be of interest.

I have been observing this condition in London elementary school children during the past two years, and during this time about 20,000 children have been examined with this view, the number of boys and girls being approximately equal. Eighty-three cases of accessory nipple were found, giving a percentage of a little over 0.4 of all cases examined. Of these, 53 were in girls and 30 in boys. Fifty-five were on the left side, 35 of these being in girls and 20 in boys. Twenty-one were on the right side, 10 in girls and 11 in boys. In all these cases there was one accessory nipple only, but 7 children showed a bilateral polythelia—one extra nipple on each side: 6 of these were girls and only one a boy. In one of these girls the nipples were above and external to the normal nipples, but in every other case the accessory nipples were below and internal to the normal ones. All the accessory nipples were very small; an exceptionally large one reached a diameter of 3 millimetres; this was in a well developed girl of 12.

No nipples in abnormal positions were noted, but as the children are not completely stripped in the routine examination, this observation is of no value—I am, etc.,

London, July 3rd. EDITH M. GUEST, M.D.Lond.

ETHER *VERSUS* CHLOROFORM.

SIR,—I have given anaesthetics to a very large number of cases during thirty-two years of practice, following on two years of hospital resident work at the Metropolitan Hospital, E., and the Radcliffe Infirmary, Oxford. For over three years as an honorary anaesthetist to the King George (Military) Hospital, S.E., of 1,650 beds, I was generally giving anaesthetics for various surgeons (general surgery, nose and throat surgery, and eye surgery) two mornings a week, and not infrequently an afternoon as well.

I have usually given chloroform by preference (by the old, open, folded-lint method first taught me by Dr. Mills of Bart's). I have never had a death from anaesthetics. I had to give an anaesthetic in many cases of very severe operations (sometimes prolonged to two and a half or three hours) where the mere shock of the operation was possibly enough to cause death.

(1) As regards chloroform — I found that the most dangerous symptoms occurred generally during the first half-hour, after which all went well. This seems to me to confirm the dictum of my old teacher and friend the late Sir Lauder Brunton—that most so-called cases of death from anaesthetics were really deaths from shock—want of anaesthetics. I remember in this connexion the case of a very stout middle-aged lady on whom Sir Charters Symonds was performing inguinal colotomy. I was giving chloroform. She began to cough, and Sir Charters said "Don't let her cough"—I pushed the chloroform, coughing stopped, and the breathing became quiet, even, and normal. She made a good recovery.

(2) As regards ether—in many cases, and especially at the King George Hospital where I have had to administer to a man who (1) had been gassed (2) had had any shell shock, (3) had any tendency to bronchitis or even pharyngitis—I have had to discontinue ether, on account of cyanosis, continued coughing and expectoration of stringy mucus, and continue with chloroform — in all cases to a safe termination.

I may say that for a number of years I used always to give ether by preference, as I had been taught; so that I am quite as much at home with it as with chloroform.

May I in all humility venture to say that, apart from the purity of the drug, I think extra danger from chloro-

form is due to the less marked and less noisy character of the danger symptoms, and given constant observation and readiness of resource, these need not be more feared than those of ether? I am sure that in many cases chloroform has been blamed as against ether where the latter was either inadmissible or inadvisable.—I am, etc.,

London, S.W., July 7th. G. D. PARKER.

FREEDOM OF NEGRO RACES FROM CANCER.

SIR,—The letter of Dr. Fouché will interest all medical men practising in West Africa, who can, I am sure, amply confirm his remarks with regard to the rarity of cancer in pure negroes.

It is true it occasionally occurs in towns on the seaboard, such as Accra, Lagos, and Calabar, which have a heterogeneous population and where the natives have lived in close contact with Europeans for upwards of four hundred years, but even then it is a rare condition, differing in this respect from sarcoma. Appendicitis is likewise uncommon except in the coast towns, and the only case I have seen alive or in the *post-mortem* room (apart from a case in a half-caste that occurred at Accra in 1913) was secondary to a filarial infection of the psoas muscle.

In Northern Nigeria the extreme rarity of carcinoma may be judged by the fact that the only recorded case, at any rate in recent years, was one of carcinoma mammae in an old woman from Sokoto, and this specimen is now in the Museum of the Royal College of Surgeons. In Northern Nigeria, moreover, the women do not commonly cover their breasts, and it is therefore more than usually easy to observe cases of this kind among the 9,000,000 inhabitants.

I may add that during a period of two years in Abyssinia I neither saw nor heard of a case of carcinoma from my French, Greek, Italian, and Russian colleagues, all of whom had large practices in the capital. The Abyssinian, moreover, is not a negro, though intermarriage with slave tribes has produced negroid features in many cases.—I am, etc.,

London, S.W., July 2nd. N. A. DYCE SHARP, West African Medical Service.

A HOSPITAL CONTRIBUTORY SCHEME.

SIR,—Much correspondence recently appeared in your columns concerning hospital policy, the tenor of which fairly reflected the absence of precedent to guide or constructive policy to build on. It may therefore be of interest to your readers to learn how we in Sevenoaks have tried to solve our problems.

Last year a cottage hospital of a dozen beds was rebuilt into the Sevenoaks and Holmesdale Hospital with twenty-six beds; it contains two main wards, private wards, operating theatre, *x*-ray rooms, laboratory, etc.

In order to find support for a larger hospital, we started a contributory scheme, under which a worker pays 2d. a week for himself and family, except such children as are themselves wage-earners, the latter also contributing 2d. a week. The income limit of those who join was fixed at £200 a year. In conformity with the British Medical Association policy, the medical staff claimed and obtained a "token" payment out of the premiums of 1 per cent. After less than a year the number of members who are paying weekly is approaching 2,000, and we find that the total of their premiums is very little short of the whole cost to the hospital of those contributors admitted during the same period.

Recently application was made to the Hospital Committee by workers earning from £200 to £375 a year to be enrolled under the scheme. The matter was very thoroughly considered by the medical staff, with the result that they unanimously decided that they would be ready to attend persons enjoying such incomes, under a contributory scheme, provided that the following fees were paid:

(1) For every case admitted £3 3s. to the doctor attending.
(2) An additional fee of £5 5s. for every major operation.
(3) A fee of £1 1s. for out-patient operations.

The honorary treasurer and honorary secretary estimated bed-days per 100 members and prepared figures, and found that premiums scaled from 15s. to 30s. per annum according to income would meet, with a margin, the total cost to the hospital of maintenance together with the above professional fees. The Committee has therefore given its consent to this extension of the contributory scheme.

As a hospital we may then, I think, claim that we have worked out a satisfactory plan for contract attendance of all below the paying-ward class, with due consideration of professional interests. And this has been due, first of all, to the ideal state of good feeling and united action obtaining amongst all the medical men in Sevenoaks, with the consequent thorough discussion of everything which touches their interests; secondly, to the fact that all doctors in the district are allowed to attend their own cases; thirdly, to the consideration of an able lay committee, the members of which have successfully attacked and mastered the new situation which hospitals have to face; and, lastly, perhaps not a little to the presence of a member of the medical staff on the Committee, acting as honorary secretary, and therefore in a position to act, as it were, as liaison officer between Committee and medical staff.—I am, etc.,

F. MARSDEN BURNETT, M.D., D.P.H., Hon. Secretary, Sevenoaks and Holmesdale Hospital.

Sevenoaks, July 3rd.

HYDROLOGY.

SIR,—I was one of those fortunate members of the medical profession who was able to accept the invitation to spend last week-end in Harrogate, when, besides being royally entertained, we were given opportunities of visiting and having explained to us the working of the Royal Bath Hospital and the Royal Baths and Wells. I would like to call attention to one lesson which the visit should have impressed on the medical visitors—namely, the vast amount of benefit to the sick which results from appropriate general non-specific treatment skilfully applied.

The growth of bacteriology, the development of clinical pathology and biochemistry have tended to divert the medical profession's mind from general to specific therapeusis. Vaccines and serums have enabled us to deal very effectively with certain diseases, and these advances in scientific knowledge are not neglected by the Harrogate physicians; but in the main the Harrogate treatment is general treatment, having for its aim the full development of the natural defences of the body by the stimulation of metabolism and the removal of injurious waste products. That this line of treatment may be very successful the patients shown to us in the hospital clearly showed.

A distinct advance in the study of that form of general treatment classed as hydrological has been made by the University of London by inaugurating a course of lectures and demonstrations on this subject—an advance for which we have to thank in the first instance Dr. Fortescue Fox, Dr. Campbell McClure, and their co-workers, but so apathetic had the profession previously been to this question that it permitted without protest the scrapping of all the balneological apparatus of the institute for officers in Great Portland Street soon after the end of the war, and it seems probable that a similar department of a large hospital for pensioners will be treated in the same way unless prompt measures are taken to prevent it. Much is said about the failure of panel practitioners to treat their cases, while at the same time an excellent method of treatment is not made available to them.—I am, etc.,

London, W., July 2nd. HAROLD H. SANGUINETTI.

THE PEPTONE TREATMENT OF ASTHMA.

SIR,—In answer to a letter published recently in your columns (June 30th, p. 1116) by Dr. Auld, I must apologize for any inaccuracy that occurs in my book on asthma with regard to the dosage of peptone advised by Dr. Auld for intravenous injection. What I meant to convey was that he used a mixture of both Witte's and Armour's peptones, while others used Witte's alone. The word "mixture" should be read instead of the word "each" in the text.

With regard to the absence of notes of reference to Dr. Auld's many articles, I imagined that his work on the subject was so well known as to need little further reference from me.—I am, etc.,

London, W., July 6th. FRANK COCA.

TRYPARSAMIDE.

SIR,—One can appreciate with Sir Frederick Mott[1] the importance of incontestably establishing the diagnosis of syphilis of the brain or spinal cord parenchyma, by finding the *Sp. pallidum* in the cerebro-spinal fluid, before cure following any particular treatment of this condition be claimed. It is a stipulation not very easy to fulfil, and most of us will be glad enough now to give tryparsamide a trial in cases where the diagnosis rests on clinical signs and changes in the cerebro-spinal fluid short of revealing the parasite.

We owe to Sir Frederick Mott the demonstration of the close similarity of histology in invasion of the brain parenchyma by the spironema of syphilis and the trypanosome of African sleeping sickness; and he has dwelt on the analogy existing between these infections. Therefore (as an aid to optimism) I venture to remind him of the paper[2] read by Dr. Clement Chesterman in January last, giving his experience of the effect of tryparsamide on cases of sleeping sickness in the Belgian Congo. I particularly direct attention to a certain six cases in his series of forty. None of the six had had any previous treatment; all of them showed well marked signs of involvement of the central nervous system, and in all trypanosomes were found in the cerebro-spinal fluid before beginning treatment. By Sir Frederick Mott's own criterion[3] these were cases of trypanosomiasis of the brain or spinal cord parenchyma.

Two were improved by treatment, but developed rather serious visual troubles; another was in apparent good health three months after treatment; the remaining three had normal cerebro-spinal fluid after cessation of treatment and were well and back at work eight, nine, and eleven months, respectively, later.—I am, etc.,

London, W., July 10th. H. M. HANSCHELL.

Universities and Colleges.

UNIVERSITY OF LONDON.

A MEETING of the Senate was held on June 20th.

The Academic Council reported that in view of urgency the Vice-Chancellor had appointed the following examiners: *For the M.D. examination*, Branch III, July, 1923: Sir Frederick Mott and Dr. E. Farquhar Buzzard. *For the M.S. examination*, Branch III, July, 1923: Mr. H. L. Eason, Mr. J. H. Fisher, Mr. C. H. Fagge, Sir John Parsons, and Mr. C. B. Goulden.

It was resolved to institute a B.Sc. degree in pharmacy for external students.

Professor Frederick Wood Jones has been appointed to the University Chair of Anatomy tenable at St. Bartholomew's Hospital Medical School.

Dr. R. J. S. McDowall has been appointed to the University Chair of Physiology tenable at King's College.

The annual report of the Brown Animal Sanatory Institution showed that 5,205 animals had been brought to the institution during 1922. Five lectures on the nature of ultramicroscopic viruses had been delivered at the Royal College of Surgeons by the Superintendent in 1922 in conformity with the terms of the will of late Mr. Brown. The superintendent, Mr. F. W. Twort, who has been reappointed for one year from June 1st, 1923, has continued his work in the laboratories on the ultramicroscopic viruses and on the filter-passing bacterial lysins. A certain number of experiments have also been carried out on the lepra bacilli of man and rats.

The University Studentship in Physiology for 1923-24 has been awarded to Mr. H. M. O. Lester, who has passed the second examination for medical degrees as an internal student at St. Thomas's Hospital Medical School; he is doing research work on the development and function of the prostate gland.

The University Medal at the M.B., B.S. Examination for internal and external students, May, 1923, has been awarded to D. H. Patey of the Middlesex Hospital.

Applications for the William Julius Mickle Fellowship, of the value of at least £200, must be sent to the Principal Officer of the University by October 1st. It is awarded annually by the Senate to the man or woman, who, being resident in London and a graduate of the University, has, in the opinion of the Senate, done most to advance medical art or science within the preceding five years, and has therein shown conspicuous merit.

UNIVERSITY OF BRISTOL.

THE regulations for the degree and diploma in Dental Surgery and for the conjoined degrees of Bachelor of Medicine and Bachelor of Surgery have been amended in order to conform with the revised regulations of the General Medical Council.

[1] BRITISH MEDICAL JOURNAL, July 7th.
[2] Transactions Royal Society of Tropical Medicine and Hygiene, vol. xvi, No. 7, January, 1923.
[3] Ibid.

UNIVERSITY OF LIVERPOOL.

THE following candidates have been approved at the examinations indicated:

M.B.—A. V. Campbell, S. M. A. Farukl.

FINAL M.B., CH.B.—*D. Macfarlane, †F. Earlam, †T. J. Kirkpatrick, ‡J. Roberts, §A. Tumarkin. *Part III.*—B. Abelman, A. R. D. Adams, J. Berkson, R. W. Brookfield, T. L. Bulmer, Hilda Cantrell, W. J. B. Chidlow, R. G. Cooke, V. C. Cornwall, I. H. Davies, Hilda M. Davis, J. O. Edwards, D. P. Finn, N. D. Fraser, J. R. Griffiths, S. Hesselberg, Elizabeth Hunt, T. Knowles, W. J. Laird, D. A. Levin, C. B. Lewis, Eileen M. Lloyd, Mary M. McMillan, P. Malpas, J. H. Moorhouse, Beatrice M. Niven, T. V. O'Brien, C. H. Owen, J. D. O'M. Poole, Gertrude E. Pugmire, E. L. Roberts, Dorothea W. Rogers, J. F. D. Shrewsbury, E. R. Smith, Helen Standring, Dorothy A. Taylor, H. A. Thomas, E. J. Whymark, H. P. Widdup, A. G. Wilkinson, E. B. Wilkinson, J. Williams, Mary G. T. Williams, *Part I.*—Mary G. B. Allen, C. G. Foxcroft, T. Hare, A. D. Harper, **R. W. Jones, T. S. L. Jones, Rebecca Katz, W. A. McCurdy, J. McWilliams, J. R. Mitchell, F. C. O'Mara, R. D. Owens, P. J. Rogers, J. H. Thompson, Mabel J. Watterson. *Part II.*—‖B. E. Acland, M. M. F. Arthur, C. B. Bamford, P. D. Barling, E. C. Benn, R. V. Berrington, ‖C. H. Bradley, R. S. Brock, Helen S. H. Brown, Alison M. Brummitt, J. W. Cohen, N. Cresswell, M. M. Datnow, Edwina M. Davies, Eileen N. Deane, W. T. Donovan, W. H. Ellam, W. Emdin, E. A. R. Evans, F. R. Faux, ¶‖H. W. Fell, H. R. Fisher, M. Fisher, C. G. Foxcroft, F. F. Fuller, G. A. Fulton, G. A. Garrett, J. Gaughan, H. Gobie, M. Godwin, J. Graham, T. A. Griffiths, Dorothy M. Hanson, T. Hare, A. D. Harper, F. C. S. Hinsbeeck, Fannie S. Holt, S. Howard, J. E. Howie, G. P. Huws, Bertha H. Irvine, F. P. Irvine, Elvy I. Johnstone, C. P. Jones, ¶‖R. W. Jones, R. C. Jones, ¶R. Jones, D. Katz, G. F. Kinder, J. Leggate, W. E. Lishman, J. H. M. Little, G. Lowe, W. A. McCurdy, ¶G. Macdonald, Margaret S. Macdonald, E. Miles, D. H. Mills, E. P. Maloney, G. A. Moulden, ¶A. Newton, J. R. R. Nicholas, J. R. Oddy, J. J. O'Donovan, F. C. O'Mara, A. Oserovitz, E. R. S. Owen, R. D. Owens, A. Pool, R. J. Prydderch, Gwendolen H. ff. Roberts, J. T. C. Roberts, E. Rowlands, E. Scott, J. A. Scott, P. Strelitz, G. V. L. Taylor, A. C. Terry-Thompson, ‖J. H. Thompson, ¶J. J. du Toit, Marjorie A. Unsworth, ¶H. S. Welton, T. W. White, ¶Gwennie Williams.

* First Class Honours with Distinction in Obstetrics and Surgery.
† Second Class Honours with Distinction in Obstetrics.
‡ Second Class Honours with Distinction in Medicine.
§ Second Class Honours with Distinction in Surgery.
‖ Distinction in Public Health.
¶ Distinction in Forensic Medicine and Toxicology.
** Distinction in Pathology.

UNIVERSITY OF ABERDEEN.

THE following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—G. M. Anderson, Margaret J. Anderson, †A. G. Badenoch, J. B. Hill, Janet F. M. Burnett, C. W. M. Cameron, Catherine J. Clark, J. Clarke, P. G. Currid, R. Davidson, D. Dean, *A. W. Downie, *R. D. Downie, Elizabeth A. Dunbar, Mary Esslemont, E. C. Gordon, M. M'K. Gunn, W. H. Harris, Eleanor M. Henderson, Charlotte S. Hendry, J. S. Hutchison, A. J. Ironside, E. J. Jolly, †I. W. Laing, *A. Lyall, B. W. Macdonald, F. Maclean, †Florence J. Malcolm, J. C. Milne, H. W. Mulligan, R. G. Munro, F. R. Mutch, J. H. Peters, Margaret J. Rennet, E. R. Sorley, J. S. Taylor, Lily M. Watt, F. L. Webster, Mabel Wilson, Maude Wilson.

* With much Distinction. † With Distinction.

UNIVERSITY OF DUBLIN.

TRINITY COLLEGE.

THE following candidates have been approved at the examinations indicated:

FINAL M.B., PART I.—*Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene, Pathology and Bacteriology:* *T. W. May, *P. N. H. Labuschagne, *W. C. Somerville-Large, L. Rosin, J. Dick, W. Gallaugher, J. V. Morris, W. B. Roantree, E. T. S. Rudd, O. Chance, W. P. E. McIntyre, T. G. B. Crawford, W. A. Hopkins, J. R. Gregory, O'D. T. D. Browne.

PART II.—*Medicine:* *Marjorie F. Sibthorpe, *V. O. McCormick, P. J. Grobler, M. Cohen, B. W. D. Fayle, F. J. O'Meara, C. T. MacCarthy, W. T. Hogan, W. E. Hutchinson, M. Jaffe, J. E. Deale, F. T. Easby, R. A. D. Pope, W. L. Duncan, Isobel G. Smith, H. M. Martin, H. Ruben, H. Lewin, R. A. Dench, R. C. L. Griffiths, Martha Reid, A. V. Foster, C. H. Keller, S. Narunsky, Bertha H. Lawler, J. J. O'Grady, F. G. Brown, H. W. L. Dale, Isabel a H. Speedy. *Surgery:* *R. T. Jackson, B. W. D. Fayle, F. J. O'Meara, J. E. Eliason, J. A. Gaynor, J. M. Mounsey, Marjorie F. Sibthorpe, R. A. D. Pope, H. S. Roseman, Maria E. Wagener, R. A. Dench, W. S. Dixon, P. F. H. Wagner, B. Morris, W. E. Hutchinson, W. E. C. Wynne, A. Darlington, A. Asherson, W. F. Whaley, Gladys Weatherill, F. T. Easby, D. H. F. Milmo, Dorothy C. H. L. Heyman, Alice M. A. Downing, R. S. McElroy, R. C. L. Griffiths, H. L. Hanna, R. L. Hill, J. R. Wills, S. D. Gabbe, J. C. Byrne, E. C. Downer, W. J. Janse van Rensburg, C. T. MacCarthy, S. Narunsky, P. C. du Plessis, C. Gordon, A. V. Foster, T. Freedman, Dorothy I. Henry, H. Kohlberg, I. Marin, L. Phillips, C. R. Hillis, J. Kruger, J. A. Levitt, J. M. O'Connor. *Midwifery:* *J. J. Laing, *M. A. Gerrard, *H. Isaacson, J. E. Deale, W. F. Whaley, R. Schaffer, R. F. J. Henry, W. L. W. Smith, N. G. McAuliffe, T. G. Wilson, G. Purdy, G. A. Sloan, W. R. Aykroyd, Evaline E. Mooney, Lucy M. Joly, J. J. O'Grady, I. J. Isaacson, M. Jaffe, C. Gordon, Kathleen D. Murison, N. M. Greeves, P. P. van der Merwe, J. A. du Toit, Isabella H. Speedy, J. M. Gordon, J. J. FitzGerald, W. J. Janse van Rensburg, R. L. C. Fisher.

DIPLOMA IN PUBLIC HEALTH, PART I.—*Chemistry, Bacteriology, Physics, and Meteorology:* E. C. Smith, Elizabeth Killian.

PART II.—*Sanitary Engineering, Practical Sanitary Report, Hygiene and Epidemiology, Vital Statistics, and Public Health Law:* E. C. Smith, Dorothy K. M. Henry, Elizabeth Killian, Catherine A. Goggin.

* Passed on high marks.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

At a meeting of Fellows on July 5th five Fellows were elected into the Council in the vacancies occasioned by the retirement in rotation of Sir Charters J. Symonds and Sir Herbert F. Waterhouse, by the deaths of Sir William Thorburn and Sir Charles Ryall, and by the resignation of Mr. F. F. Burghard. In all 1,052 Fellows voted, 1,043 sending their ballot papers through the post and 9 voting in person, and the result of the poll was as follows:

	Votes.	Plumpers.
JAMES BERRY	612	6
GEORGE ERNEST GASK, C.M.G., D.S.O. ...	466	28
JOHN HERBERT FISHER	445	53
PERCY SARGENT, C.M.G., D.S.O.	445	3
WILLIAM SAMPSON HANDLEY	433	8
Sir H. F. Waterhouse	358	4
Herbert J. Paterson, C.B.E.	342	11
George Grey Turner	332	13
Victor Bonney	304	3
Thomas Percy Legg, C.M.G.	177	4
Donald Armour, C.M.G.	111	5

Mr. Handley becomes substitute member of Council for Mr. Burghard until July, 1929, and Mr. Sargent becomes substitute member of Council for Sir William Thorburn until July, 1930.

CONJOINT BOARD IN IRELAND.

THE following candidates have passed the Final examinations:

Jane A. Brennan, F. S. Bourke, H. Bugler, P. J. Clarke, S. B. Carlisle, Dorothy M. Coulson, S. L. Christie, S. H. Ervin, F. B. Harrison, P. Kilcoyne, P. S. McCabe, P. J. C. MacDonnell, Iris P. Nolis, T. V. C. Nolan, Mary R. Nolan, D. M. F. O'Connor, J. F. O'Connor, Anne O'Connor, A. T. O'Grady, C. B. D. O'Henaghan, Helen P. Regan, Mary A. Ryan, J. D. Sayers, R. E. Sadlier, S. L. Simon.

Obituary.

PATRICK WHYTE RATTRAY, M.A., M.B.ABERD., F.R.C.S.ENG.,

Holloway.

THE death of Dr. Patrick Whyte Rattray on July 2nd, his 64th year, of angina pectoris, removes one who was regarded by his fellows as no ordinary man. A graduate of the highest distinction both in arts and medicine of the University of Aberdeen, he was for a time senior demonstrator of anatomy there.

Dr. A. Blackhall Morison writes: Those of his contemporaries who survive, will recall the high reputation he had as a teacher. Some years ago, the writer of this notice invited a well known Aberdonian to dinner, and remarked that he had also asked one of the most distinguished graduates Aberdeen ever sent out to meet him, who was living contentedly in general practice. He at once inquired, "Do you mean Pat Rattray?"

Rattray appears to have sought teaching appointments in anatomy and the assistant surgeoncy to a hospital in earlier life, and on all these occasions unsuccessfully, after which he quietly betook himself to general practice, which he cultivated with success. The writer, who was occasionally invited to confer with him, always regarded it as a compliment, and usually remarked on meeting him, "What insoluble conundrum have you set me this time?" For, the cases in which Rattray sought counsel, were always "hard nuts to crack." When he failed in his efforts to secure the public appointments referred to (and who can foretell the issue of such contests?) he seems to have shunned all publicity. He wrote nothing, which is to be regretted, for the studies of one with his calm judgement and comprehensive outlook would have been valuable. It is no abuse of language to state that, silent and unobtrusive as was the career he chose, one word alone adequately describes him—he was "great," and we shall not often look upon his equal.

He leaves a widow, a son (who did good work in the naval flying corps during the war), a daughter, and warm friends to mourn his loss.

DONALD MURRAY, M.B., C.M.GLASGOW,

Formerly M.P. for the Western Isles.

WE regret to announce the death of Dr. Donald Murray, which took place in a London nursing home on July 6th, in his 60th year. Dr. Murray was born at Stornoway, and received his medical education at Glasgow University, where he graduated M.B., C.M. in 1890. He was keenly interested in politics even as a student in Glasgow, and was president of the University Liberal Club in 1889; he was president also of the Medico-Chirurgical Society in 1890. For some years he was in practice at Brora, Sutherlandshire, and later at his native town of Stornoway. In 1910 he took the D.P.H. of Aberdeen University, and was subsequently appointed medical officer of health for the island of Lewis and the burgh of Stornoway, and school medical officer for Lewis and the western portion of Ross and Cromarty. From 1905 to 1910 he was chairman of Stornoway school board, and he was a justice of the peace for Ross and Cromarty. He resigned his offices on being elected to Parliament as an Independent Liberal in 1918. He soon made himself at home in the House of Commons and his ready wit enlivened many otherwise dull hours. He took an active part in the work of his party, and as a member of the Parliamentary medical group. He was an old member of the British Medical Association, and was always ready to aid the Association in its parliamentary work. He was defeated at the general election in 1922 by a National Liberal; his defeat was rather a severe blow to him and he had hoped soon to return to Westminster for a Highland constituency. He had a passionate love for the Highlands and for his native island, and while a member of the House of Commons endeavoured to improve the lot of the crofters in his constituency.

His funeral took place on July 9th, at Stornoway, and a memorial service was held at Highgate Presbyterian Church, London, when Sir Donald Maclean gave a brief address, speaking of Dr. Murray's high ideals, courage, independence, and friendship. He was faithful in all things, tender as a woman. They went through hard times together, but he never failed in his loyalty to his ideals, his courage, his independence of opinion, and his sense of humour. He was no man's enemy, but he had a hatred of social injustice, no matter where, and to its remedies he devoted his life.

A. G. PARROTT, M.R.C.S., L.R.C.P.,

Shanghai, China.

ON May 22nd, 1923, Dr. A. G. Parrott died suddenly from heart failure, at the age of 67, at his home in Shanghai, China. He was born in Suffolk and went out to China in 1878, and worked for six years in the China Inland Mission. In 1884 he returned to London with his wife and family and afterwards entered as a medical student at the London Hospital, and after six years' study he took the diplomas of M.R.C.S. and L.R.C.P. in 1892. He returned to China in 1893 to work with the Open Brethren as a medical missionary. He settled at Laohokou, a city in the north of Hupeh province, on the Han river, some thousand miles inland from Shanghai.

Life and medical work in a far-inland station in China in those days were by no means easy, and the stress and strain of it no doubt largely contributed to the illness and death of his first wife. As a consequence of the Boxer upheaval in 1900 Dr. Parrott had to leave Laohokou, and went to reside in Shanghai, engaging in private practice and throwing himself into all kinds of mission work.

He served as honorary medical officer to the Door of Hope Rescue Homes for Chinese girls, to the Foreign Women's Home, to the Blind School for Chinese boys, and to the Chinese Industrial School. He was visiting physician to the Shantung Road Hospital for Chinese.

Dr. Parrott was only indisposed for twelve days. Under rest and treatment he recovered sufficiently to sit up and enjoy reading, but his heart suddenly gave out and he died. He is survived by his widow and four out of his six children, to whom the deepest sympathy is extended.

Mr. Cecil J. Davenport, F.R.C.S., of Shanghai, to whom we are indebted for these particulars, adds: "He leaves behind him a fragrant memory, an inspiring example, and many sorrowing friends who feel that earth is poorer through the loss of his humble, helpful, hopeful presence."

Dr. JOHN C. BEDWELL of Chesterfield, who died on June 24th, aged 50, was educated at the University of Edinburgh and the Middlesex Hospital. He graduated B.Sc.Lond., and took the diplomas of the Scottish Conjoint Board in 1916. He held the appointments of assistant school medical officer to the Derbyshire Education Committee and certifying physician under the Mental Deficiency Act, and was a member of the Chesterfield Division of the British Medical Association. He was formerly an assistant school medical officer in Sheffield. Dr. Bedwell was held in high esteem in Chesterfield as a hard-working, conscientious medical officer. He was very popular with all members of the school staffs and with the members of his own profession with whom he came in contact.

Medico-Legal.

LIBEL ON A MEDICAL REFEREE.

DR. SELBY WETHERELL PLUMMER, of Old Elvet, Durham, a medical referee under the Workmen's Compensation Act, had been the subject of criticism contained in a pamphlet signed by five officials of the Houghton Miners' Lodge, printed by a Durham firm of printers, and circulated to the members of the Houghton Lodge and also to the secretaries of other lodges of the Durham Miners' Association. Dr. Plummer referred this pamphlet to the Medical Defence Union, which decided to sue the signatories and the printers for libel. The case Plummer v. Gregory and Others was heard by Mr. Justice Greer and a jury at Durham Summer Assizes, and the proceedings terminated in a verdict for Dr. Plummer, who was awarded £100 damages.

The pamphlet was headed "Protest against a medical referee," and commenced:

"We wish to draw your attention again to medical referee's decisions on compensation cases (especially to Dr. S. Plummer, of Durham) . . . For a considerable time we took compensation cases to the county court ourselves until we were compelled to send them to Durham, and not one case was sent by the judge to a medical referee. Why? Because we were able to produce medical evidence and the judge examined all witnesses of the accident, and was therefore able to give a fair decision. We ask you to examine the reports of Dr. Plummer and judge for yourselves."

The pamphlet went on to instance four cases reported upon by Dr. Plummer, in the last of which Dr. Plummer said:

"There is, however, a permanent disability and he is not able to make full use of his left hand, and his condition is such that he is fit for employment as a pony-putter but he could not do heavier work which involves the full use of his left hand."

The pamphlet proceeded:

"It is evident that he thinks that 'putting' means 'putting lamps out,' and surely we ought to defend men who unfortunately happen to have accidents in the mine and whose future happiness, if any, and destiny, depends upon an Act of Parliament which allows a medical referee who, lacking practical experience, gives such ridiculous reports as stated above."

The judge held that the occasion was privileged—the pamphlet having been addressed only to members of the Durham Miners' Association—and that the comment so far was fair. But there followed a vital sentence which the judge considered should be left to the jury to ascertain whether the defendants were actuated by malice, in which case, of course, the privilege would be lost.

"We now strongly object to any further cases going before Dr. Plummer, and cases at our colliery are held up through our decision, and we respectfully ask your members to help us to turn this man off the medical referee's list, because if it had been *vice versa* he would have been struck off the list years ago."

The printers apologized, but, as the judge said, in the eyes of the law people who take part in printing or circulating a libel are responsible equally with its authors, and a jury cannot distinguish between the different defendants as to damages.

Dr. Plummer went into the witness box and dealt with the allegations contained in the pamphlet *seriatim*. The allegation that he was lacking in practical experience was refuted by his statement that he had lived in a mining district all his life, and that he had many times been down mines to see work that had been offered to workmen.

The defence was itself an exoneration of Dr. Plummer. It revealed the fact that the Houghton Lodge were so dissatisfied with the method of working the Workmen's Compensation Act that they not only issued the pamphlet complained of but also debated a resolution urging the abolition of medical referees altogether. Thus, in setting forth their objections to medical referees, the Houghton Lodge were betrayed into the use of strong language seriously affecting the reputation of an individual medical man. As Mr. Justice Greer aptly said, the jury must realize they were not dealing with the editor of a newspaper or a diplomatist, but with men who were accustomed to say in somewhat exaggerated but plain language, what they meant, and who did not always use the right word. Thus, in the last paragraph of the pamphlet, the defendants had got themselves into a state of mind where they were reckless and regardless of the effect of their words, and inserted a statement which they really did not need for the purpose of furthering the argument they were putting forward.

This case illustrates the difficult position in which a medical man may be put in his relations with any society of this kind. A society can circulate among its members any statement in which it may comment upon their doctor. The statement may do the doctor much harm, and yet the society responsible cannot be made liable if it has not abused their privilege—"privileged occasion," or "fair comment"—by being obviously actuated by malice. It was on the last paragraph that the defendants lost their case.

Medical News.

THE Fellowship of Medicine has arranged a course of lectures on medical and surgical diseases of children by the members of the staff at the Royal Waterloo Hospital from July 16th to August 3rd. Those taking part in the course will have an opportunity of attending the out-patient department, wards, and operations. A special course in dermatology will be given by the members of the staff at the Hospital for Diseases of the Skin, Blackfriars, from July 16th to 28th inclusive. Instruction will be given in the out-patient department every afternoon from 2.30 p.m., and a special demonstration on interesting selected cases will be held at 4 p.m. on Monday, July 16th, and Wednesday, July 25th. The course will also include a venereal clinic on Tuesday and Friday each week from 5.30 to 7 p.m. The fees for the courses are 3 guineas and 2 guineas respectively, and application for copies of the syllabus and tickets of admission should be made to the Secretary to the Fellowship of Medicine, 1, Wimpole Street, W.1.

THE British National Council for Mental Hygiene, which seeks to emulate the achievements of the American, Canadian, and French Councils in the promotion and preservation of the mental health of the community, is making an appeal for funds. The first essential is held to be the prevention and cure of those minor disorders which may develop into mental disability. It desires to co-operate with societies interested in industrial psychology, mental after-care, and mental deficiency and delinquency. It is anxious to facilitate the study of psychology and psychiatry on broad and temperate lines and to be put into a position to encourage scientific research. Donations should be sent to the honorary treasurer, Lord Southborough, at the offices of the National Council for Mental Hygiene, Room 55, Windsor House, Victoria Street, S.W.1.

THE Dental Board of the United Kingdom is arranging, for persons registered under the Dentists' Act, 1921, short intensive courses of lectures and demonstrations at Cardiff, Peterborough, and Dublin, and will make similar arrangements in Glasgow and Belfast if courses are not given at the dental schools there. Three lecturers will be appointed for each course and will receive a fee of 3 guineas for each lecture, with travelling and hotel expenses. Applications by lecturers should be received by the Dental Board (44, Hallam Street, London, W.1) not later than September 1st. Entrants for a course will be charged a fee of 1 guinea, but this will be returned at the end of the course to those who attend 75 per cent. of the lectures.

THE honorary secretary of the British Society of Dental Surgeons (11, Chandos Street, W.1) asks us to state that a meeting of holders of the L.D.S. diploma will be held on Friday, July 20th, at Steinway Hall, Wigmore Street, at 7.45 p.m., to consider the action of Liverpool University in offering a modified curriculum for the L.D.S. diploma to dentists (1921) and the possibility of such action by other educational authorities.

FOUNDER'S DAY will be celebrated at Epsom College on Monday, July 30th, when Lord Muir Mackenzie will give away the prizes.

Ars Medici is the title of a journal for general practitioners, founded in Vienna in 1911. Since the beginning of this year an English translation has been published monthly. It appears to be designed mainly for the use of the profession in America, the subscription (2 dollars) being payable to the American Express Company, 65, Broadway, New York.

SIR STEWART STOCKMAN, chief veterinary officer to the Ministry of Agriculture, has been elected president of the Royal College of Veterinary Surgeons.

THE annual dinner of past and present students of St. Mary's Hospital Medical School will be held at the Connaught Rooms, Great Queen Street, W.C., on Monday, October 1st, at 7 p.m.

MESSRS. KNOEDLER AND CO., of 15, Old Bond Street, W., are exhibiting a collection of some fifty pictures by nineteenth-century French painters. At the back of the catalogue is a letter addressed to Sir Coutts Lindsay at the Grosvenor Gallery by a group of French artists, apparently at the end of last century. Many of these painters are now dead, but pictures by most of them are included in the present exhibition. The writers of the letter describe themselves as struggling against convention and routine to bring back art to the scrupulously exact observation of nature, attempting to render the reality of form in movement as well as the fugitive phenomena of light. The collection is of great interest in showing the development of art during the nineteenth century, from the landscapes of Corot with figures from the classical age and such pictures as Géricault's trumpeter of the Imperial Guard, to the realistic figures of Edouard Manet and Degaz and the landscapes of Claude Monet and Sisley. A portrait of Mlle. Gonin by Ingres can be compared with that of Mlle. Lemonnier by Manet. The method of producing effects with thick dabs of paint is shown in Monticelli's Les Reitrer, and we may admire the iridescent haze of Monet's Palais Ducal at Venice. The designers of the exhibition seem to have accomplished their purpose, and the collection is well worth a visit, and the observer will be able to judge how far the writers of the letter to Sir Coutts Lindsay have attained the objects with which they set out.

PATRICK JOSEPH HONAN, aged 26, who graduated M.B., B.Ch., B.A.O.Belfast in 1920, was convicted at the Surrey Assizes on July 9th on the charge of performing an illegal operation upon a woman. According to the report in the *Yorkshire Post* he admitted misconduct with the woman and that he had performed the operation which led to miscarriage. He was sentenced to eighteen months' hard labour. The judge said that but for his character and comparative youth, and the fact that he did not commit the offence for gain, but from personal reasons, he would have sentenced him to a long term.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediocra, Westrand, London;* telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin;* telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"IRISH SURGEON" inquires whether the cost of attending purely professional meetings can be claimed as expenses.

*** We are of opinion that the reply is in the negative, assuming, as we do, that the meetings in question are for the furtherance of general professional interests rather than in connexion with some particular professional work for which remuneration is being received.

"F. J. T." bought his partner's half-share in the practice in February, 1923. What is the correct basis of his liability for the financial year ending April 5th, 1924?

*** "F. J. T." is in the position of a successor in the practice to the old firm; as such he is liable to tax on the full profits of the practice on the three years' average, but can claim an adjustment of that assessment if he should find that the amount of his profits (not necessarily on the basis of cash receipts) for his first year as sole proprietor has been less than the sum assessed.

"W. A. M." inquires (*a*) as to allowance of subscriptions to British Medical Association and Medical Defence Association, (*b*) as to the basis of assessment of fees from the Ministry of Pensions (part time) and locumtenent work, and (*c*) whether he can make any claim for loss incurred in a practice he has purchased.

*** (*a*) The proportion expended on membership is allowable; we suggest as a minimum that £3 3s. might be taken in the former case as representing the cost of literature supplied to members. (*b*) Strictly each appointment is separately assessable under Sch. E on the basis of the current year's (or period's) receipts; we believe that in practice in such a case as "W. A. M.'s" the whole earnings are pooled as being income derived in the form of professional profits assessable under Sch. D on the three year's average, but there seems to be no statutory title to that form of assessment. (*c*) "W. A. M." is assessable on his predecessor's average, which he can have reduced to *nil* on showing that owing to some specific cause since or by reason of the succession his work has resulted in a financial loss; if he has other income for the same year the amount of the loss can be set against it, and repayment claimed if that income has borne tax, but if that be done the loss cannot be carried forward for future averages as a negative quantity.

LETTERS, NOTES, ETC.

WIGHT, WHITE, LIGHT.

THE study of place-names is bewildering, and if we may judge from the scorn with which one learned writer greets the suggestions of another learned writer, not much progress has yet been made in establishing principles. It is perhaps because the British Medical Association is going to hold its annual meeting in Portsmouth, where the Isle of Wight lies across the narrow water, that "An Ignorant Student" has sent us a copy of a pamphlet on *Origins in Place Names*, luxuriously printed at the Chiswick Press. It suggests a generalization which may prove useful. In many place-names in England there is an element which indicates whiteness, and an explanation has been found in chalk cliffs or limestone formations. The suggestion now made is that the reference is not to whiteness but to lightness, a clearing or open space upon which the sun struck, relieving the gloom of the forest; it would be on such areas that our primitive ancestors would build their villages and cultivate the soil, and early feel the need of a name. The Romans called the Isle of Wight "Vectis," and Canon Taylor, still a respectable authority, was confident that Wight was derived from the Roman name according to phonetic laws, which, we believe, are still admitted. Taylor calls it a corruption, but it is more probable that the Romans corrupted an earlier name. It seems to be accepted that white is derived at long range from the Sanskrit "çveta," so that it does not seem altogether unreasonable to suggest that the name of the isle before the Romans came was something like "Vit," with a long "i."

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 33, 36, 37, and 38 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 34 and 35.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 20.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, W.C.2, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.